DOCUMENT RESUME

ED 364 652 UD 029 664

AUTHOR	Alves-Zervos, K. L., Ed.; Shafer, J. R., Ed.
TITLE	Syntheses of Research and Practice: Implications for Achieving Schooling Success for Children at Risk. Publication Series #93-5.
INSTITUTION	Temple Univ., Philadelphia, PA. National Education Center on Education in the Inner Cities.
SPONS AGENCY	Office of Educational Research and Improvement (ED), Washington, DC.
PUB DATE	93
NOTE	286p.
PUB TYPE	Collected Works - General (020) -- Reports - Evaluative/Feasibility (142)
EDRS PRICE	MF01/PC12 Plus Postage.
DESCRIPTORS	*Academic Achievement; *Disadvantaged Youth; Economically Disadvantaged; *Educational Research; Family Involvement; *High Risk Students; *Inner City; *Learning Problems; Literature Reviews; State of the Art Reviews; Student Improvement; Student Problems; Urban Youth

ABSTRACT

This six-article document examines the research base that can be used in formulating plans to improve the chances of schooling success for all students. Each article summarizes well-confirmed knowledge in a particular area, giving attention first to the research literature, and then to the tested experiences and practices of leading professionals. The authors include in their reviews estimates of the state of practice in their respective topic areas and then proceed to recommend improvements for effectively linking practice with the state of the art. Papers (1) identify those factors that influence the teaching and learning process; (2) note the wide variety and creativity in children's services coordination to date; (3) present a literature review of models designed to prevent or treat adolescent school failure, truancy, dropout, and other problems; (4) summarize the concept of resilience as it has been advanced in developmental psychopathology; (5) review the outcomes of 55 research studies and program evaluations, including 2 meta-analyses and 1 research synthesis; and (6) examine the role of parent involvement, particularly in early intervention programs, in fostering the academic success of children. Papers and their authors are as follows: (1) "Toward a Knowledge Base for School Learning" (Margaret C. Wang, Geneva D. Haertel, and Herbert J. Walberg); (2) "Structures and Strategies: Toward an Understanding of Alternative Models for Coordinated Children's Services" (Robert L. Crowson and William L. Boyd); (3) "Family Processes, Family Interventions, and Adolescent School Problems: A Critical Review and Analysis" (Ruth Baugher Palmer, Gayle Dakof, and Howard A. Liddle); (4) "Educational Resilience in Inner Cities" (Margaret C. Wang, Geneva D. Haertel, and Herbert J. Walberg); (5) "The Effectiveness of Collaborative School-Linked Services" (Margaret C. Wang, Geneva D. Haertel, and Herbert J. Walberg); and (6) "Parent Programs: Past, Present, and Future Practices" (Aquiles Iglesias). (GLR)

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Syntheses of Research and Practice: Implications for Achieving Schooling Success for Children at Risk

Edited by K. L. Alves-Zervos and J. R. Shafer

The National Center on Education in the Inner Cities

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The National Center on
Education in the Inner Cities

The research reported herein was supported in part by the Office of Educational Research and Improvement (OERI) of the U.S. Department of Education through a grant to the National Center on Education in the Inner Cities (CEIC) at the Temple University Center for Research in Human Development and Education (CRHDE). The opinions expressed do not necessarily reflect the position of the supporting agencies, and no official endorsement should be inferred.

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Preface

This six-article compilation, "Syntheses of Research and Practice: Implications for Achieving Schooling Success for Children at Risk," represents a commitment to examine the research base, broadly defined as representing current knowledge or the "state of the art," that can be used in formulating plans to improve the chances of schooling success for all students. Each article summarizes well-confirmed knowledge in a particular area, giving attention first to the research literature, and then to the tested experiences and practices of leading professionals. The authors include in their reviews estimates of the state of practice in their respective topic areas and then proceed to recommend improvements for effectively linking practice with the state of the art. Thus, the research syntheses provide state-of-the-art standards against which the state of practice can be judged.

In "A Knowledge Base for School Learning," Margaret C. Wang, Geneva Haertel, and Herbert J. Walberg identify those factors that influence the teaching and learning process. The knowledge base that the authors have developed is the product of evidence accumulated from 61 educational research experts, 91 quantitative research syntheses, and 179 handbook chapters and narrative reviews; the data represent over 11,000 statistical relationships. In the second article, "Structures and Strategies: Toward an Understanding of Alternative Models for Coordinated Children's Services," William Lowe Boyd and Robert Crowson note the wide variety and creativity in children's services coordination to date and focus on a comparison and analysis of the models represented in five cases of children's services experimentation.

The next article, "Family Processes, Family Interventions, and Adolescent School Problems," by Howard Liddle, Gayle Dakof, and Ruth Palmer, presents a literature review of models designed to prevent or treat adolescent school failure, truancy, dropout, and other problems. The apparent paucity of scientific studies in this area is one of many interesting findings discussed in this review. The fourth

article, "Educational Resilience in Inner Cities," by Margaret C. Wang, Geneva Haertel, and Herbert J. Walberg, summarizes the concept of resilience as it has been advanced in developmental psychopathology, and discusses educationally relevant research consonant with their definition of educational resilience.

The fifth article, "The Effectiveness of Collaborative School-Linked Services," by Margaret C. Wang, Geneva Haertel, and Herbert J. Walberg, reviews the outcomes of 55 research studies and program evaluations, including two meta-analyses and one research synthesis. The 55 sources represent findings from six programmatic areas, including parent education, school readiness, and life skills; teen pregnancy and parenting; dropout prevention; alcohol and drug prevention and abuse; integrated services; and parent involvement. In the final article, "Parent Programs: Past, Present, and Future Practices," Aquiles Iglesias examines the role of parent involvement, particularly in early intervention programs, in fostering the academic success of children. Dr. Iglesias reflects on what has led to current parent involvement practices, and then examines these practices and proposes solutions to the problem of closing the gap between theory, research, and practice.

Toward a Knowledge Base for School Learning

Margaret C. Wang, Geneva D. Haertel,
and Herbert J. Walberg

National Center on Education in the Inner Cities

The research reported herein was supported in part by the Office of Educational Research and Improvement (OERI) of the U.S. Department of Education through a grant to the National Center on Education in the Inner Cities (CEIC) at the Temple University Center for Research in Human Development and Education (CRHDE). The opinions expressed do not necessarily reflect the position of the supporting agencies, and no official endorsement should be inferred.

During the 1980s, two developments occurred that altered the way educators and researchers thought about teaching and learning: (1) a burst of educational reform which ushered in innovative programs and practices and (2) the creation of new research tools to evaluate the effectiveness of school interventions. The mediocre performance of the nation's students and the increased number of at-risk children and families spurred government, business, educators, and the public to rethink many aspects of schooling. Reform efforts included, for example, school restructuring, statewide academic standards, and the implementation of new assessment methods. Although many of these innovative practices have been in place for almost a decade, their long-term impact has not been established. As researchers begin to study the impact of these reforms, they have new tools to determine which programs, practices, and contexts produce the most robust and generalizable results. These tools are demonstrating that, in fact, some educational practices and programs work far better than others.

This paper has three purposes: (1) to identify the relative effects of a wide range of variables that influence learning, (2) to determine whether three different methods of analysis--content analyses, expert ratings, and meta-analyses--agree on whether and how strongly these variables influence learning, and (3) to address the presence of a knowledge base underlying learning.

THE 1980S: AN ERA OF SCHOOL REFORM

In the United States, many sociological and educational trends have converged to create a climate of educational reform. With the release of A Nation at Risk (National Commission for Excellence in Education, 1983) and A Nation Prepared: Teachers for the 21st Century (Carnegie Forum on Education and the Economy, 1986), the public became aware of the mediocre performance of the nation's schools and the inadequacies of the teaching corps. The poor performance of the United States' students, when compared to their international counterparts (Stevenson, 1983; Stevenson, Lee, & Stigler, 1986), generated concern among business and civic leaders that the nation's graduates would be ill-equipped to deal with the demands of a global economy.

Accompanying the glum reports on the nation's educational system, was news of an increase in the number of at-risk students. Demographic reports provided evidence of U.S. families beset by urgent problems including poverty, teenage pregnancies, single-parent households, substance abuse, limited health care, and inadequate and unaffordable housing (Levy & Copple, 1989). These demographic trends point to the need for better education and social and health services in order to break the cycle of disadvantage facing at-risk students and their families (Schorr, 1989).

Educators responded to the news of poor results and increasing numbers of at-risk children by restructuring schools, increasing standards for students and teachers, and developing a variety of innovative programs. The 1980s became an era of school reform during which most of the 50 states and many local districts participated in educational reform and improvement programs.

Many professional education organizations provided leadership in reforming the nation's schools. The National Governors Association, a pioneer in school restructuring, recommended fundamental changes in curriculum, instruction, and the patterns of decision making and accountability used in our nation's schools. Professional organizations for teachers, such as the National Science Teachers Association and the National Council of Teachers of Mathematics, issued new standards for students' academic performance coupled with recommendations for assessing higher order thought processes, as well as factual recall. These same organizations also set standards for the performance of teachers (National Council of Teachers of Mathematics, 1989; National Science Teachers Association, 1989).

Innovative programs and schools also demonstrated new directions for educational reform. The widely recognized programs include, for example: Comer's School Development Program (Comer, Haynes, & Hamilton-Lee, 1988), Levin's Accelerated Schools Project (Levin, 1988), RJR Nabisco's Next Century Schools (House Committee on Education and Labor, 1990), the Saturn School of Tomorrow (Norris, 1991), Sizer's Coalition of Essential Schools (Sizer, 1992) and Wang's Adaptive Learning Environments Model (Wang & Zollers, 1990).

The programs developed by Comer, Levin, Sizer, Wang and others have focused on serving at-risk student populations. New attitudes toward students with special needs, curricular innovations, and new instructional strategies are among the key characteristics of these programs. New attitudes toward student diversity are reflected by recognizing students' prior knowledge, emphasizing strength-building rather than remediation, and distinguishing between cultural differences and deficits. Curricular innovations include focusing on complex, real-life problems; embedding basic skills instruction within these problems; and relating new content to students' prior knowledge and cultural background. New instructional strategies include modeling powerful thinking strategies, scaffolding complex tasks, employing reciprocal teaching, and using a variety of instructional approaches (Means & Knapp, 1991; Reynolds, 1989; Wang, Reynolds, & Walberg, 1986; Williams, Richmond, & Mason, 1986).

Reports of students' poor performance also led to AMERICA 2000, the first federally initiated reform of U.S. schools (U.S. Department of Education, 1991). AMERICA 2000: An Education Strategy was built around six national goals agreed upon by the 50 governors to increase the achievement of U.S. students. AMERICA 2000 has four tracks designed to promote educational excellence by improved accountability, new technology, lifelong learning, and greater parental and community involvement. The AMERICA 2000 program was adopted by all 50 states and implemented in thousands of communities across the United States.

Professional education organizations; federal, state, and local governments; the business community; and the public all participated in the reform efforts of the 1980s. Although some of the new programs and practices of the 1980s were supported by research findings, few of these innovations have shown replicable long-term impact on students. Kirst (1991) addressed the lack of long-term studies, saying, "The paucity of longitudinal experiments and demonstrations has resulted in an overabundance of 'snapshots,' studies of specific treatments

and interventions, without a systematic knowledge base established over time and under varying circumstances" (p. 38). This paper is an attempt to begin to cull, from theory, empirical results, and expert judgements, a systematic knowledge base of school learning.

NEW RESEARCH TOOLS: THE ADVENT OF META-ANALYSIS

For nearly a century, educational researchers have examined the teaching and learning process (Walberg & Haertel, 1992). They have employed four basic types of research studies, including: (1) primary research analyzing original qualitative and quantitative data, (2) secondary analyses of original data, (3) narrative commentaries describing and critiquing studies without quantitatively summarizing them, and (4) research syntheses and meta-analyses quantitatively summarizing results of studies.

Since the turn of the century, tens of thousands of primary research studies have been conducted focusing on teaching and learning. Traditionally, the results of these primary studies have been summarized in narrative reviews. Two examples of narrative reviews that have influenced school reform are What Works, a compendium of educational research results that was widely disseminated by the United States Department of Education (1986), and the effective schools literature that featured lists of school characteristics associated with high academic performance (Brookover, 1979; Brookover & Lezotte 1977; Purkey & Smith, 1983; Rutter, Maughan, Mortimore, Ouston, & Smith, 1979).

Prior to the late 1970s, researchers lacked the statistical methods needed to conduct research syntheses and meta-analyses. Once the necessary statistical methods were developed, researchers were able to draw powerful conclusions based on dozens of comparable studies that were conducted over decades. Cook et al. (1992) describe the use of meta-analytic techniques for synthesizing particular literatures. They characterize meta-analysis as "...a set of quantitative techniques that permit synthesizing results of many types of research, including opinion surveys, correlational studies, experimental and quasi-experimental studies, and regression analyses probing causal models" (p. 4). Cook et al. (1992) provide examples of how meta-analysis can answer a wide range of research questions such as, why some marital therapies are more effective than others, why some intervention programs for juvenile offenders achieve better results than others, and why gender differences in science achievement exist.

Meta-analyses (or quantitative research syntheses) employed in the late 1970s and 1980s demonstrated the consistency of educational effects and placed teaching and learning on a more scientific basis (Gage, 1978; Glass, McGaw, & Smith, 1981; Walberg, 1986). Since the late 1970s, the number of meta-analyses and research syntheses has grown dramatically. Cook et al. (1992) cite Guzzo, Jackson, and Katzell (1987), who reported that in the past decade the number of articles and reports indexed in PsychINFO under the term "meta-analysis" has grown steadily. In 1985 alone, nearly 100 meta-analyses were indexed.

Meta-analyses have been used to determine the effects of particular programs, contexts, and instructional practices on learning. Researchers, for example, quantitatively summarized the effects of school programs, such

as cooperative learning and mastery learning (Johnson, Maruyama, Johnson, Nelson, & Skon, 1981; Guskey & Gates, 1986). Others synthesized the effects of particular learning contexts such as the home environment (Iverson & Walberg, 1982) and particular instructional practices, such as homework (Paschal, Weinstein, & Walberg, 1984). While each of these research syntheses and meta-analyses provided evidence of robust and generalizable findings concerning particular programs, contexts, or instructional practices, they did not provide information on the relative importance of the range of variables that impact learning. This paper compiles evidence about particular programs, contexts, and instructional practices, as well as other influences on school learning, and compares their relative influence.

DEFINING A KNOWLEDGE BASE FOR SCHOOL LEARNING

The educational challenges of the 1980s pointed out the need for a knowledge base for learning to guide reform. A knowledge base of school learning should include the learners' contexts, as well as the characteristics of learners themselves. It should not represent a particular philosophy, such as behaviorism or pragmatism. Rather, it should include theories explaining the influences on school learning, empirical results distilled from research studies, and expert judgments about influences on school learning.

Psychological, sociocultural, and instructional theories of learning and schooling should be included in such a knowledge base. Empirical results in a knowledge base for school learning should contain several types of information, including the identification of specific variables affecting school learning and their relative influence. A wide range of variables would have to be considered, including student abilities, preferences, and prior achievement; teacher characteristics and classroom behaviors; instructional materials and practices; amount of time devoted to learning; curriculum content; classroom climate; characteristics of the school, home, and community; district and state educational policies; and demographic information characterizing students, schools, communities, and states. Experts would then be able to confirm or refute empirical findings based on their experience as practitioners and researchers.

Theories, empirical results, and expert judgments are needed to establish a valid knowledge base. In this paper, then, the term knowledge base is used to represent the distillation of understandings from experts, narrative reviews and meta-analyses of variables that influence school learning. (The use of the term knowledge base, however, is not meant to imply the definition used in artificial intelligence research in cognitive science.)

DEVELOPING A THEORETICAL FRAMEWORK

The first step in developing a theoretical framework was to identify a set of variables related to learning. The authors began this process by carefully examining several models of school learning, including those of Bennett (1978), Bloom (1976), Bruner (1966), Carroll (1963), Glaser (1976), and Harnischfeger and Wiley

(1976), as analyzed within a systematic theoretical framework (Haertel, Walberg, & Weinstein, 1983). These models contributed broad categories and specific variables to the theoretical framework of school learning. For example, these models operationalized the category student ability, using variables such as aptitude, prior knowledge, verbal IQ, and pupil background. The category motivation was typically included in these models and was operationalized as perseverance, self-concept of the learner, or attitudes toward school and subject matter. The category of classroom instruction was also considered important in all models and encompassed variables such as instructional events; clarity of instruction; and use of cues, feedback, and correctives (Wang, Haertel, & Walberg, 1990).

The emerging theoretical framework was further extended by applying Walberg's (1980) nine factor model of educational productivity. Walberg's model goes beyond the earlier models of school learning by emphasizing out of school influences and social-psychological variables. Walberg's nine factors are: student age or developmental level, ability (including prior achievement), motivation, quantity of instruction, quality of instruction, psychological environment of the classroom, influence of the home, influence of the peer group outside of school, and exposure to mass media.

Also contributing to the emerging framework were the models of adaptive instruction (Wang, 1992; Wang & Walberg, 1985) that describe learning environments intended to maximize individual students' opportunities for success in school. These models consider instructional delivery systems, program design, and implementation. They draw upon Glaser's (1982) notion of "large practical variables," which include "efficient allocation and use of teacher and student time, a classroom management system, systematic teacher feedback and reinforcement of student progress, instructional interactions based on diagnosed learning needs of individual students, and flexible administrative and organizational patterns responsive to program implementation and staffing needs" (Wang et al., 1990, p. 31).

Using effective schools literature (Edmonds, 1979), the authors also identified variables that were correlated with students' success in urban schools. Although school effectiveness has been defined in various ways (e.g., Austin, 1981; Brookover et al., 1982; Kyle, 1985; Purkey & Smith, 1983; Rutter, 1981), the research is remarkably consistent in identifying variables that are related to urban students' successful academic performance. Based on the findings of Brookover (1979), Brookover and Lezotte (1977), Purkey & Smith (1983), and Rutter et al. (1979), the following characteristics of successful schools (both urban and non-urban) have been identified: curriculum articulation and organization, schoolwide staff development, parental involvement and support, schoolwide recognition of academic success, maximized learning time, district support, clear goals and high expectations, an orderly and disciplined school environment, and the principal's leadership in attending to the quality of instruction. More recent studies identify new variables that are especially suitable for use in inner-city school interventions including careful recording of student progress, the principal's selective influencing of teaching strategies, and expressing high expectations for pupils' achievement (van De Grift, 1990). In summary, the effective schools literature suggests that changes in student and school-level

performance are related to a variety of proximal variables such as instructional strategies and practices, as well as distal variables such as school restructuring, types of school organization, and state and local policies.

All of these models of school learning contributed to the final theoretical framework by providing constructs and specific variables. In addition to the models of schooling reviewed above, selected sources were examined for potential specific variables. These sources included Brophy (1986); Segal, Chipman, and Glaser (1985); Glaser (1984); Keogh, Major-Kingsley, Omori-Gordon, and Reid (1982); Wang and Lindvall (1984); Wang, Reynolds, and Walberg (1987-91); and Wittrock (1986).

From these sources and from the models of school learning, 224 variables were organized into a preliminary version of the theoretical framework. Members of the Scientific Advisory Panel of the Temple University Center for Research in Human Development and Education (including 12 prominent researchers in education) reviewed the theoretical framework and provided detailed commentaries. Using the panel members' suggestions, the authors added four more variables and revised the framework's organization. The final version of the theoretical framework contained 228 variables (a list of the 228 variables is available from Margaret C. Wang, Temple University Center for Research in Human Development and Education, Ninth Floor, Ritter Hall Annex, 13th Street and Cecil B. Moore Avenue, Philadelphia, PA 19122), grouped into 30 categories, which were further organized within six theoretical constructs.

The six theoretical constructs used to organize the framework, include: (1) **State and District Governance and Organization**; (2) **Home and Community Educational Contexts**; (3) **School Demographics, Culture, Climate, Policies, and Practices**; (4) **Design and Delivery of Curriculum and Instruction**; (5) **Classroom Practices**; and (6) **Student Characteristics**. Table 1 presents the six theoretical constructs and a description of the 30 categories that are classified within each of the six constructs. In addition, Table 1 presents the complete name of each category and an illustrative variable exemplifying each category. The following six sections describe why each theoretical construct was included in the framework, the types of research studies summarized within each construct, and the variables which operationalize that construct.

State and District Governance and Organization

The theoretical construct of **State and District Governance and Organization** was included in the framework to refer to the effects of formal institutions of government on student learning and classroom practices. Educational policy in the United States is made in "110,000 schools, 15,000 school districts, and thousands of state and federal agencies." (Grant, 1992, p. xii). Thus, government policy might be initiated at the school, district, state, or federal level (although federal policies are often transmitted through state and local agencies).

For the purposes of this paper, the effects of policy developed at the school level are included within the theoretical construct **School Demographics, Culture, Climate, Policies, and Practices**. For example, effective schools research (Purkey & Smith, 1983), studies on school culture, and studies of organizational

coherence would be considered within the **School Demographics, Culture, Climate, Policies, and Practices** construct.

The effects of District Demographics and State and District Policies are categories within the construct **State and District Governance and Organization**. Studies of Chapter 1 staff development (Griffin, 1986) and implementation of policies such as mainstreaming (Meisgeier, 1976) are also included. (See Table 1.) Federal policy, although not mentioned in the construct's title, is thought to be mediated through state and district policies.

Because the U.S. educational system is not centralized the effects of federal government on schools have been weak, a product of both law and tradition (Cohen & Spillane, 1992). State governments have nominally controlled the U.S. educational system. Nevertheless, it has only been in the last few decades that state governments have actually exerted much power (Cantor, 1980). Local districts have traditionally exerted the most influence on U.S. schooling practices. This may account for the paucity of strong effects detected in studies of state and federal policy designed to promote school learning.

Some examples of variables that operationalize this theoretical construct include policies for teacher licensure and guidelines for selection of curricula and textbooks, at the state level. Variables at the district level included teacher evaluation policies, per pupil expenditure, degree of school district bureaucratization, and presence of contractual limits on class size.

Home and Community Educational Contexts

This construct, which includes four categories describing out of school influences on learning (Community, Peer Group, Home Environment and Parental Support, Student Use of Out of School Time) is part of the theoretical framework, because educators and researchers have long believed such contextual influences have strong effects on student learning. (See Table 1.) Although some researchers have questioned the strength of out of school influences, such as parent involvement, on learning (White, Taylor, & Moss, 1992), many other researchers have documented the benefits of family involvement in improving students' academic performance as well as enhancing improvements in school attendance, reducing numbers of dropouts, decreasing delinquency, and reducing pregnancy rates (Epstein, 1988; Graue, Weinstein, & Walberg, 1983; Moles, 1982; Peterson, 1989).

This construct includes not only family involvement but also community, home environment, and peer influences as well. Variables identified in research examining leisure time television viewing (Williams, Haertel, Haertel, & Walberg, 1982), socialization influences (Scott-Jones, 1974), home instruction and learning (Graue et al., 1983), and ethnocultural effects (Brantlinger & Guskin, 1987) were included in this construct. Only recently has the role of community as an influence on school learning been examined through empirical studies. Thus, the research base on community influences used in this paper is limited.

Some community level variables which operationalize this construct include ethnic diversity and quality of social services for students. Examples of home environment and parental support variables include educational environment (e.g., number of books in the home), parental involvement in assuring regular school attendance, and parental interest in student school work. Peer group variables, for example, include level of peers' academic and occupational aspirations, presence of a well-defined clique structure, and the absence of peer substance abuse and criminal activity. Other out of school variables, to name but a few, include student participation in extracurricular school activities, amount of time spent on homework and leisure reading.

School Demographics, Culture, Climate, Policies, and Practices

Since the early 1980s, both scholarly journals and the popular press have devoted considerable attention to the effects of schools on student achievement. The theoretical construct of **School Demographics, Culture, Climate, Policies, and Practices** includes the following categories: Teacher/Administrator Decision Making, School Culture, Schoolwide Policy and Organization, Parental Involvement Policy and School Demographics (See Table 1). Each of these is described below.

School Culture is defined as an ethos affecting teaching and learning. Although out of school influences such as the socioeconomic status of the community impact school culture, such out of school influences are discussed in this paper under the theoretical construct of **Home and Community Educational Contexts.** Here, School Culture refers to the norms of schools, whether they reflect school efforts, community influences, or student characteristics. School norms can range from the status of athletics to attitudes toward graffiti or from the importance of making the honor roll to student respect toward teachers. Among researchers, the most commonly studied attributes of School Culture are variables such as staff retention, collaborative planning and collegial relationships, use of cooperative goal structures, order and discipline, and the recognition of academic achievement (Purkey & Smith, 1983).

The category Teacher/Administrator Decision Making reflects the degree of autonomy and importance that teachers and administrators have in addressing the needs of the school. Teachers sometimes play a decision making role in establishing schoolwide policies, such as uniform discipline, grouping practices, selection of curricula, allocation of resources, the role of team teaching, and effective use of instructional time. Administrators' decision making has usually been viewed as having a greater impact on schoolwide climate and policy (Brookover, Beady, Flood, Schweitzer, & Wisenbaker, 1979; Dwyer, Lee, Rowan, & Bossert, 1982; Stallings & Mohlman, 1981). For instance, the role of the principal as an instructional leader has received much attention from the research community. Although some researchers are skeptical about the "great principal theory" (Purkey & Smith, 1983), many researchers acknowledge that leadership is an essential ingredient of schoolwide improvement.

The category of School-Wide Policy and Organization covers a wide variety of procedures to maintain the day to day activity of schools. This category, however, does not cover policies toward mainstreaming, desegregation, or Chapter 1, because these policies are articulated at the district or state level, though

implemented by individual schools. The category does include policies concerned with grading and academic progress, discipline, attendance, multi-age grouping, instructional teaming, cross-age and peer tutoring, academic tracking, minimization of external classroom disruptions, and attendance and tardiness. This paper addresses this category of variables because such policies are essential to school operation.

The category of Parent Involvement Policy is distinguished in this paper from actual parent involvement. This category focuses on the articulation of policies that define the role of parents in the improvement and operation of the instructional program as well as school-sponsored programs to improve parenting skills. Although schools' use of parent involvement policies is based on mixed evidence, most educators believe that parents should be informed of school goals and responsibilities (Purkey & Smith, 1983) and that parents' involvement does benefit students' completion of homework, attendance, and behavior (Graue et al., 1984). Another means of involving parents in schools employs workshops such as "parent effectiveness training," which are sometimes used to enhance parents' use of consistent discipline, to develop appropriate attitudes toward education, and to promote healthy child-rearing practices.

The research community has looked to School Demographics to explain student learning. Commonly studied school-level demographics include, for example, the size of the school (Gump, 1980), number of classrooms, number of teachers and aides, level of categorical funding (Spady, 1973), and the mix of racial, ethnic and socioeconomic groups (Rutter, 1983).

Design and Delivery of Curriculum and Instruction

This theoretical construct includes three categories: Curriculum and Instruction, Curriculum Design, and Program Demographics (See Table 1). Because researchers agree that the design and delivery of curriculum and instruction impacts the way students learn, it was included in this paper.

The first category Curriculum and Instruction focuses on curriculum content and instructional delivery, both of which affect student learning. Different kinds of student learning result from different kinds of curriculum (Walker & Schaffarzick, 1974). The use of discovery-based science curricula, for instance, encourages students who understand scientific processes, reasoning, and deduction, whereas inductive curricula may produce students with a larger base of scientific facts and greater fluency with scientific vocabulary (Curbelo, 1985; El-Nemr, 1980; Shulman & Tamir, 1973). Curricular concerns like thematic units, use of multidisciplinary approaches, and use of culturally diverse materials have also been included in this category.

Similarly, different modes of instruction produce different learning outcomes. White and Tisher (1986), for example, review the value of laboratory work versus tutorials, group study, self-study, and lectures as a means of training in problem solving. Results from a variety of primary studies indicate that students believe laboratory work produces different cognitive and affective benefits than teachers do. Instructional arrangements like mastery learning techniques, cooperative learning strategies, personalized instruction, and computer-assisted instruction are included in this category.

The second category is comprised of Curriculum Design variables, which mediate curriculum through teacher presentation of material as well as texts and other educational media. Variables in this category, such as the use of advance organizers, affect student learning. For instance, early studies showed advance organizers had positive effects, but mixed results appeared in the 1970s. White and Tisher (1986) conclude that advance organizers are generally advantageous, though results are not conclusive. Examples of other curriculum design variables covered in this category include: employing specific objectives and learning hierarchies; linking assessment and diagnostic tests to curriculum; and making curriculum available to different size classroom groups and different kinds of learners.

Program Demographics are included in the construct **Design and Delivery of Curriculum and Instruction** because variables such as very small class size have been found to influence student learning (Glass & Smith, 1979). Other demographic variables included in this category are: the number and size of instructional groups, the proportion of students with special needs served in regular classes, the number of classroom aides required, and the amount of curricular resources such as textbooks.

Classroom Practices

The theoretical construct **Classroom Practices** encompasses eight categories (See Table 1). This construct was included because teacher behaviors and classroom organization and management are linked to student outcomes (Brophy & Good, 1986; Rosenshine & Stevens, 1986). Each of the eight categories is discussed in further detail below.

The category Classroom Implementation Support refers to variables that contribute to the implementation of an instructional program. These variables include creating and maintaining instructional materials, configuring classrooms to promote instruction, making use of classroom aides, using records to monitor student progress, establishing efficient classroom routines, communicating classroom rules and procedures, and developing student responsibility for independent self-study.

Variables within the Classroom Instructional category reflect the research on the organization of instruction. It includes techniques to ensure students understand the goals of instruction and the content being presented. Many of the variables in this category were identified through the "research-based teacher effectiveness literature" including process-product research (Brophy & Good, 1986). Direct instruction is a clear example of the type of instructional technique included in this category. Other illustrative variables are rehearsal and elaboration of new concepts, sequencing of instructional events, confrontation of student misconceptions, signalling of transitions in lessons, redundancy in presentation of content, teacher enthusiasm about content, maintaining expectations about content mastery, providing frequent feedback, promoting metacognitive learning strategies, and scaffolding of instruction.

Variables within the Quantity of Instruction category have been well-researched and there is strong agreement that students need to be fully engaged in their academic pursuits and that teachers need to make wise use of instructional time (Berliner, 1979; Carroll, 1963; Harnischfeger & Wiley, 1976). Illustrative examples of

variables in this category include: length of school year and day; time on task; time spent on educational activities such as classroom instruction, homework, field trips, and viewing educational television; and the nature of content missed in regular classrooms when students were removed for "pull out" programs.

The category Classroom Assessment includes standardized, curriculum-based, as well as teacher-made tests to measure student learning. This category is important because so much money has recently been allocated for local, state, and federal tests in the hope of improving student learning (Catterall, 1990). Variables in this category include frequency of assessment, use of descriptive learner profiles rather than simple total scores, and assessment of higher order thought processes as well as basic skills in reading and mathematics.

Classroom Management was included as a category in this theoretical construct because empirical findings abundantly demonstrate the effectiveness of particular classroom management techniques (Doyle, 1986). Effective classroom management has been shown to increase student engagement, decrease disruptive behaviors, and enhance use of instructional time, all of which results in improved student achievement. Examples of variables in this category include minimal classroom disruptions, group alerting, learner accountability, transitions, and teacher "withitness."

The category Student and Teacher Social Interactions refers to the frequency and quality of social interactions in the classroom. These interactions contribute to students' sense of self-esteem and can foster a sense of membership in their class and school (Anderson, Everetson, & Brophy, 1979; Brophy & Good, 1986). Among the variables included are positive verbal interactions among students and teachers, teacher reactions to students' answers, teacher use of praise, teacher coaching of appropriate social behavior, and student responses to questions from students and teachers.

A related category, Student and Teacher Academic Interactions, examines frequency and quality of academic interactions in the classroom. It encompasses teachers' questioning styles, praise, reinforcement, and use of correctives. Illustrative variables include the frequency and difficulty level of teacher questions and student answers, the use of high post-question wait time, the frequency of calls for substantive oral and written responses.

The category of Classroom Climate focuses on the socio-psychological dimensions of classroom life. Because classroom climate has a moderate positive influence on student achievement (Haertel, Walberg, & Haertel, 1981) it was included in this construct. Characteristics of a classroom with a positive climate include frequent and cooperative interactions between students and teachers, common interests and values, the pursuit of cooperative goals, a clear academic focus, well-organized and well-planned lessons, explicit learning objectives, appropriate level of task difficulty for students, and an appropriate instructional pace (Haertel et al., 1981). The variables in this category reflect these characteristics.

Student Characteristics

This theoretical construct is composed of five psychological categories (Social and Behavioral, Motivational and Affective, Cognitive, Metacognitive, and Psychomotor). Also included is a Student Demographics category and a History of Educational Placement category (see Table 1). Educators have long acknowledged that school learning is strongly influenced by an individual's psychological attributes or aptitudes (Corno & Snow, 1986), demographic variables, such as gender (Becker, 1992), and students' history of educational placement (i.e., promotion, retention, or placement in special education). For this reason, all the above concerns were included in this theoretical construct. Specific categories are described further below.

The first psychological category, Social and Behavioral variables, is important given the social nature of schooling. Many educators believe that children who engage in frequent disruptive behaviors, such as talking out of turn or hitting other children, often perform poorly in school, whereas cooperative children, who engage in positive and constructive behaviors, are more likely to perform well in school. Examples of social and behavioral variables are students' positive, nondisruptive classroom behaviors, appropriate classroom activity levels, cooperativeness with teachers and peers, and ability to make friends.

The variables in the Motivational and Affective category have received increased attention in the past decade, because students' interests, preferences, attitudes toward school and subject matter are recognized as important attributes that foreshadow their tendency to persevere and excel on school tasks. In the 1970s, cognitive psychologists supplied new understandings of self-control and self-regulation as motivational orientations that support learning. Weiner (1976) and Lefcourt (1976) redefined "achievement motivation" and locus of control in terms of cognitive attributions, and Bandura (1977, 1982) developed a cognitive theory of self-efficacy. While their contributions were not directly related to students' performance in school, more recent studies suggest that motivational and affective variables, long acknowledged as important by classroom teachers, must be considered as key attributes necessary for developing independent, self-regulated learners. Examples of variables illustrating this category are attitude toward school, teacher, and subject matter; motivation for life-long learning; independence as a learner; perseverance on learning tasks; and academic self-competence in subject area.

The importance of variables in the Cognitive category is self-evident. Historically, tests of cognitive aptitudes are highly correlated with school achievement at all age ranges (Corno & Snow, 1986). Cognitive aptitudes include general intelligence, "fluid" and "crystallized" intelligence, prior knowledge, prior competence in reading and mathematics, and verbal knowledge. Other examples of variables included in this category are Piagetian stage of cognitive development; memory; levels of reasoning ability; and specific academic knowledge in subject areas.

During the past decade, researchers have identified a variety of metacognitive processes and learning strategies that guide learners as they perform complex tasks (Brown, 1978). These processes and learning strategies are included within the Metacognitive category. Brown defines metacognitive skills as the planning, activating, monitoring, and evaluating of lower order cognitive skills. Metacognitive processes require mental awareness and self-appraisal of cognitive activities. Employing metacognitive processes and learning strategies

enhances students' academic performance (Weinstein & Mayer, 1986). The specific variables comprising the metacognitive category include self-regulatory and self-control strategies, comprehension monitoring, and positive strategies to cope with failure and to generalize concepts (Brown, 1980; Brown & Palincsar).

The last psychological category, Psychomotor, has only one variable. Psychomotor skills specific to the area being instructed were included in this theoretical construct, because they are relevant in any school learning task where physical dexterity may be important such as writing.

The Student Demographics category within the **Student Characteristics** construct includes a range of variables such as chronological age, socioeconomic status, and gender which are correlated with school learning (Walberg, 1980). Variables such as ethnicity, first language, health status, and special education placement are also related to school learning, and thus were included in this theoretical construct.

The final category in the **Student Characteristics** construct is History of Educational Placement. Promotion, retention, or placement in special education are also related to school learning, justifying their inclusion in the theoretical construct.

METHODS

The collection, coding, transformation, summarization, and analysis of the data are described below for each of the three methods of analysis--content analyses, expert ratings, and meta-analyses. Readers uninterested in the technical methodology may wish to skip to the Results section. Appendices 1 and 2 provide specific technical details of the procedures used in collecting, coding, and aggregating the data used in the content analyses and the meta-analyses. Results from the Wang et al. (1990) content analyses of research literature, and Reynolds, Wang, and Walberg's (1992) survey of expert ratings are combined in this paper with findings from 91 meta-analyses (quantitative syntheses). The uniqueness of this paper is in its comparison and contrast of results across the three methods of analysis and in the calculation of overall statistical estimates of effects.

Content Analyses of Research Literature on School Learning

Wang et al. (1990) reported content analyses of research literature on school learning. Data from the content analyses were employed in the current study. A synopsis of the corpus of studies, coding procedures, and the methods used to summarize the data are described below. A more detailed description is included in Appendix 1.

Selection of a Corpus of Studies. From the large number of review articles on school learning, the authors chose 179 for the final corpus (a complete list of the bibliographic references for the 179 sources is found on pp. 38-42 of Wang et al., 1990). These comprised authoritative reviews and handbook articles, especially documents sponsored by the American Educational Research Association, government documents, and other resources. The final corpus also included studies recommended by the Scientific Advisory Board. (See Appendix 1.) The research literature included mostly sources describing K-12 regular classroom learning but some articles were also included that concern the teaching and learning of mildly handicapped students.

Coding Procedure. A three-point scale was used to code the strength of each of the 228 variables' relation to school learning. Details of the coding procedure are described in Appendix 1.

Data Summary. Means, standard deviations, alpha reliabilities, and frequency of mention were recorded for the 30 categories (Wang et al., 1990, p. 34). Appendix 1 provides more information about how the data was aggregated to represent each of the 30 categories. The alpha reliabilities reported for the 30 categories ranged from .71 to .99; only four of the reliabilities were less than .80, and most exceeded .90. The means for the 30 categories reported in Wang et al. (1990) were used as data in this study.

Expert Ratings of the Importance of Factors Related to School Learning

Reynolds et al. (1992) reported results from a survey of educational researchers on the importance of specific variables to effective school learning. A description of the survey, its administration, and the method used for analyzing the data is summarized below.

The Sample. The population was composed of 134 educational research experts who were first authors of the 179 major annual review and handbook chapters, book chapters, government documents, and journal review articles used in Wang et al. (1990). (Some authors wrote more than one chapter.) Each expert received a survey asking for ratings of the 228 variables along with a follow-up mailing. A total of 61 educational research experts responded for a return rate of 46%.

The Survey. In addition to background information on the expert's area of specialization and institutional affiliation, the machine-scoreable survey asked for a rating on a four-point Likert scale of the influence of each of the 228 variables on student learning. The scale ranged from "3," indicating strong influence on learning, "2," indicating moderate influence on learning, "1," indicating little or no influence on learning to "0," indicating uncertain influence on learning. The instructions defined learning to include both the process of learning and its outcomes.

Data Summary. A mean rating across the 61 respondents was calculated for each of the 228 variables. The means were aggregated into the 30 categories.

Meta-Analyses of Research Literature on School Learning

Corpus of Studies Synthesized. Effect sizes and correlations were acquired from a six chapter special issue of the International Journal of Educational Research (IJER) (Fraser, Walberg, Welch, & Hattie, 1987) which compiles the results of many meta-analyses of learning. See Appendix 2 for more information on the corpus of studies, included in Fraser et al. (1987). In addition, a library search was conducted to provide subsequent meta-analyses. Appendix 3 contains a list of the meta-analyses from Fraser et al. (1987) and the six additional research syntheses and meta-analyses that were included in the final corpus of studies.

Preparation of Data for Analysis. A set of decision rules was established to guide the selection of statistical results from the 12 tables of results presented in Fraser et al. (1987). These decision rules are presented in Appendix 2. The objective of these rules was to identify the quantitative results that best fit the 30 categories

used in the theoretical framework in order to create a data set comprising a correlation or effect size for each of the 30 categories. Statistical results from the six additional meta-analyses acquired in the library search were also incorporated. Mean correlations or effect sizes were available for 23 of the 30 categories.

Some of the meta-analyses reported results in terms of effect sizes rather than correlations. These effect sizes were transformed into correlations (See Appendix 2.) There was one mean correlation for each meta-analysis used. Thus, for each of the 23 categories, there was a set of mean correlations. For example, the category Quantity of Instruction included results from three meta-analyses, and as such, comprised a set of three mean correlations.

Next, a single weighted mean correlation for each of the 23 categories was calculated using the formula and procedure described in Appendix 2. This procedure was followed for each of the 23 categories.

Data Summary. A weighted mean correlation was recorded for 23 of the 30 categories. This set of 23 mean correlations was used in this study.

Analysis of the Content, Expert, and Meta-Analyses Data

Analysis of the three sets of means (content analyses, expert ratings, and meta-analyses) included transforming the data, identifying outliers, and calculating summary statistics and correlations. Two of the 30 categories from the theoretical framework, Accessibility and History of Educational Placements, reflected variables commonly associated with special education practices and were eliminated for purposes of this analysis.

Calculating Scaled Scores for Each Category and the Six Theoretical Constructs

In order for all three data sets to be in a comparable metric, the 28 mean ratings from the content analyses, the 28 mean ratings from the experts, and the 23 weighted mean correlations from the meta-analyses were transformed into z-scores. Z-scores are standardized scores with a mean of zero and a standard deviation of one. The z-scores were then transformed into T-scores which are scaled scores with a mean of 50 and a standard deviation of 10. This eliminated negative numbers and facilitated interpretation of the data. Using the T-scores, an overall mean was calculated for each of the six theoretical constructs and for each of the 28 categories.

Several steps were completed to ensure the accuracy of data entry and transformation. The data were entered and verified. Hand checks were made on several of the transformations from effect size to correlation to ensure their accuracy, as well as on the transformations from raw data to z-scores and from z-scores to T-scores. All transformed scores were reviewed to confirm that the values were within the expected range.

Identifying Outliers

Also using the T-scores, least-squares linear regressions were computed between content ratings and expert ratings; between content ratings and meta-analyses; and between expert ratings and meta-analyses. Each of these three linear regressions was computed utilizing average T-scores for each of the 28 categories in the content analysis and expert ratings, and for each of the 23 categories in the meta-analyses. Examination of scatterplots of

residuals around regression lines was used to identify outliers, that is, discrepancies among the three sources of data. The residuals were also examined using the stem and leaf plots in Figure 1.

Stem and leaf plots are a quick way to view a distribution of statistical data (Tukey, 1977). In stem and leaf plots, actual numerical values are presented. For each of the three sets of regression residuals in Figure 1. (content-expert, content-meta-analyses, expert-meta-analyses) a column, or stem, is presented. The left side of the stem contains the first digit of a residual. On the right side of the vertical stem is a row of digits, with each digit representing one leaf. Each leaf is the second digit of a residual. To read the stem and leaf plot, take the value to the left of the stem and combine it with each leaf to the right of the stem. For example, using the content-expert stem, there are four residuals presented with the values -.10, -.10, -.11, and -.15. There is also one residual with the value .15 and so on. Using these plots, residuals can be examined and outliers identified. For the content-expert residuals there is one clear outlier, .34. The same procedure was used to identify outliers for each of the three sets of residuals. Based on these procedures, four categories were identified as outliers. State Policy, Student Use of Out of School Time, Psychomotor, and Program Demographics, and omitted from further correlational analyses.

RESULTS

The results of this study are presented in four sections. The first section characterizes the final corpus of 270 reviews (179 handbook chapters and reviews, and 91 meta-analyses). The second section presents an average T-score for each of the six theoretical constructs. Summary statistics, including average T-scores for the 28 categories are presented in the third section. In addition, the third section lists the highest and lowest T-scores within each of the three methods (content analyses, expert ratings, and meta-analyses). The final and fourth section presents correlations between content analyses, expert ratings, and meta-analyses.

Characteristics of the Final Corpus of 270 Reviews

Table 2 presents the substantive focus and disciplinary orientation of the 270 reviews and syntheses that were summarized in the content analyses (179 handbook chapters and reviews) and in the 91 meta-analyses (research syntheses). The foci of the reviews match the six theoretical constructs used in developing the framework. The six foci range from indirect determinants of learning such as **State and District Governance and Organization** to the more direct determinants of student learning, including **Design and Delivery of Curriculum and Instruction, Classroom Practices,** and **Student Characteristics**. The academic disciplines represented in Table 2 include political science and policy studies, sociology and anthropology, psychology, and multidisciplinary studies, (i.e., several social science disciplines, including some educational and curriculum studies). Psychological studies were further divided into three groups: (1) those studies that examined behavioral constructs such as reinforcement, cues, and token economies; (2) studies examining cognitive constructs such as expectancies, attributions, metacognitive strategies, and teacher

questioning styles; and (3) general psychological studies that encompassed both behavioral and cognitive constructs, or had no clear psychological orientation.

The studies classified in Table 2 demonstrate that 70% of the education reviews and meta-analyses reported in this paper have a psychological orientation, 13% a multidisciplinary approach, 11% a political science or policy orientation, and 6% have a sociological or anthropological orientation. Classifying studies by focus and discipline shows that studies of state and district governance reflect a political science and policy perspective. Studies of home, community, and schoolwide contexts have a sociological and anthropological perspective. On the other hand, studies of more direct determinants of student learning, such as **Design and Delivery of Curriculum and Instruction**, **Classroom Practices**, and **Student Characteristics**, typically have a psychological perspective.

The corpus of 270 reviews includes many studies of direct determinants of learning. Direct determinants of learning are operationalized using proximal variables, those variables which have an immediate effect on students. Student aptitudes and classroom practices are examples of proximal variables. Indirect determinants of learning are operationalized using distal variables which are one or more steps removed from students' day-to-day lives. State and district policies and demographics are examples of distal variables. Because fewer studies in this corpus examined distal variables, it is more difficult to generalize about their influence compared to the influence of proximal variables.

All of the 270 reviews included in this corpus have student learning as a dependent variable. The majority of them operationalized student learning in terms of academic achievement. Examples of measures of these outcomes included: achievement tests, curriculum-based tests, and tests mandated by school districts, states, and the federal government. In some studies, variables can be related to learning on a single occasion whereas a different set of variables may be related to changes in learning over time. In this synthesis, it was estimated that 75% of the studies examined learning on a single occasion whereas 25% examined learning over time.

Average T-Scores for the Six Theoretical Constructs

To understand better which of the six theoretical constructs most influenced student learning, the mean T-scores of all categories within each construct were averaged together, yielding a grand mean for each construct. Table 3 presents the grand means for each of the six theoretical constructs, ordering them from greatest to least effect.

In this research, the theoretical construct with the greatest effect was **Student Characteristics**, followed by **Classroom Practices**, and **Home and Community Educational Contexts**. Having less effect were **Design and Delivery of Curriculum and Instruction** and **School Demographics, Culture, Climate, Policies, and Practices**, while **State and District Governance and Organization** had the least effect.

Student Characteristics, **Classroom Practices**, and **Home and Community Educational Contexts** are direct determinants of student learning, while **Design and Delivery of Curriculum and Instruction**, **School Demographics, Culture, Climate, Policies, and Practices**, and **State and District Governance and Organization** are indirect determinants of student learning. Constructs that are close to students' defining characteristics and educative experiences, for example, psychological aptitudes, classroom practices, and home and community environments, exert the most influence on student learning. On the other hand, constructs that are removed from students' and their everyday learning experiences, like state and district policy, exert the least influence on student learning.

Average T-Scores for the 28 Categories

Table 4 presents the average T-scores for the three methods: content analyses, expert ratings, and meta-analyses, and an overall average T-score for each of the 28 categories.

Average T-Scores by Category. The overall average T-scores for each of the 28 categories ranged from 64.8 to 32.9 (range = 31.9). The categories with the highest average T-scores carried the most influence on student learning. The five most influential categories were: Classroom Management, Metacognitive, Cognitive, Home Environment, and Student and Teacher Social Interactions. The average T-scores for these five categories ranged from 64.8 to 56.7 (range = 8.1). Categories with the lowest average T-scores included: Program Demographics, School Demographics, State and District Policies, School Policy and Organization, and District Demographics. Average T-scores for these categories ranged from 42.8 to 32.9 (range = 9.9). These results demonstrated that proximal variables exert more influence than distal variables on school learning. The remaining 18 categories listed in Table 4 cannot be as easily characterized. However, many of the more influential categories were associated with psychological and classroom practice variables, both of which are proximal, while the less influential categories like out of school time and policies about parent involvement tend to be distal variables.

Average T-Scores for Each of the Three Methods

This section describes the range of T-scores for the content ratings, expert ratings, and meta-analyses (See Table 4).

Content Ratings. Average T-scores for the content ratings of the 28 categories are presented in Table 4. They ranged from 71.2 for the Psychomotor category to 22.4 for the State and District Policies category (range = 49.3). The categories with the five highest ratings included Psychomotor, Metacognitive, Classroom Management, Quantity of Instruction, and Student and Teacher Social Interactions, extending from 71.2 to 57.3 (range = 13.9). The Psychomotor category, which received an exceptionally high content rating, was considered an outlier when the correlational analyses were performed. Its high content rating was the result of two review articles that reported very strong effects based on Skinnerian and behavioral analyses of psychomotor skills. The five categories with the least influence were Parent Involvement Policy, Teacher and Administrator Decision Making, District Demographics, School Policy and Organization, and State and District Policies extending from

41.6 to 22.4 (range = 19.2). Again, proximal categories, which include psychological and classroom variables, have more impact on learning than do distal categories which include policy and demographic variables.

Expert Ratings. Average T-Scores for the expert ratings of the 28 categories are also presented in Table 4. The scores ranged from 68.0 for the Metacognitive category to 32.8 for the State and District Policies category (range = 35.2). The categories with the five highest ratings were Metacognitive, Classroom Management, Motivation and Affective, Home Environment and Parental Support, and Classroom Instructional, extending from 68.0 to 59.3 (range = 8.7). Categories receiving the lowest expert ratings were School Policy and Organization, Psychomotor, School Demographics, District Demographics, and State and District Policies, extending from 39.1 to 32.8 (range = 6.3). The 61 educational researchers, who wrote definitive review articles and rated the importance of the 228 variables, clearly believed that proximal variables like psychological attributes, classroom instructional variables, and the home environment, have the most influence on student learning, whereas distal variables like demographics and policy were rated as less important.

Meta-Analyses. Average T-Scores for the meta-analyses, presented in Table 4, ranged from 70.2 for the Cognitive category to 32.6 for the Out of School Time category (range = 37.6). Unlike the other methods of analysis which included all 28 categories of variables, this method had only 23 categories of data available, because meta-analyses could not be found for five categories. The five categories with the highest average T-scores were Cognitive, Classroom Management, Home Environment and Parental Support, Metacognitive, and Student and Teacher Academic Interactions, extending from 70.2 to 59.3 (range = 10.9). The five with the lowest ratings were School Policy and Organization, Classroom Implementation and Support, Psychomotor, Program Demographics and Out of School Time, extending from 40.8 to 32.6 (range = 8.2). Generally, the proximal variables included in the psychological, classroom instructional, and home environment categories had the most impact on school learning, while distal variables like policy and demographics once again had less influence.

Degree of Consensus Among the Three Methods of Analysis

Pearson product-moment correlations were computed among content analyses ratings, expert ratings, and meta-analyses. Prior to computing each of these correlations, separate sets of outliers were identified as described in a previous section (Identifying Outliers).

Content Analyses-Expert Rating Correlation. The correlation between content analyses and expert ratings is .704 ($p < .01$). Before computing this correlation, the following four categories were identified as outliers and not included in the analysis: State and District Policies, Out of School Time, Psychomotor, and Program Demographics. The correlation of .704 suggested that there is substantial agreement about what variables impact learning most, based on the agreement between experts' ratings and the content analyses of handbook chapters and narrative reviews. When asked to rate the 228 variables, the 61 experts, regardless of their area of expertise, did not simply rate their own specializations as important, but instead rated the importance of variables based on a "transdisciplinary" understanding of what influences learning.

Content Analyses-Meta-Analyses Correlation. The correlation between content analyses and meta-analyses was .514 ($p < .05$), showing a moderate degree of agreement. The categories identified as outliers and eliminated before the correlation was computed were State and District Policies, Out of School Time, Psychomotor, and Program Demographics. This correlation provided evidence of "inter-source" reliability. The agreement between the meta-analyses and content analyses demonstrates the robustness and consistency of the results regardless of the source, whether it is a narrative review as represented in the content analyses or a meta-analysis.

Expert Ratings-Meta-Analyses Correlation. The correlation between expert ratings and meta-analyses was .587 ($p < .01$), evidence of moderate agreement. Only one category, State and District Policies, was identified as an outlier and removed before the correlation was computed. This correlation demonstrates agreement between expert ratings and the meta-analyses regarding the strength of different categories' effect on student learning. Thus experts' understanding of what impacts learning agrees with empirical findings established through 91 meta-analyses. This finding along with the other two correlations suggests general agreement among experts and empirically-based findings about what variables impact school learning and their relative strength.

DISCUSSION

Evidence suggests that an emergent knowledge base, though neither formalized nor explicit, underlies learning. This evidence comes from the disciplines of psychology, sociology, anthropology, political science, and multidisciplinary (including curriculum) studies. Because these different academic disciplines have directed their attention to different influences on schooling, they have helped to establish a knowledge base that looks at learning through many lenses, and that spans an array of influences on learning from the proximal to the distal. The presence of this knowledge base is demonstrated by the consensus of experts and findings from empirical research. Regardless of which method of analysis (content analyses, expert ratings, or meta-analyses) was employed, there was moderate to substantial agreement on the relative sizes of influences on school learning.

Perspectives of Different Academic Disciplines

The perspectives of different academic disciplines have directed researchers' attention to different types of variables in the study of learning. Although disciplinary views of education cannot be comprehensively summarized here, it may be useful to remind readers of a few characteristic contributions of these disciplines. Political scientists have focused on federal, state, and district level policy variables. Historically, sociologists have been concerned with demographic variables such as social class and minority group membership. Sociologists have contributed to the research on effective schools and have frequently advocated schoolwide organizational solutions to educational ills. Psychologists have directed their attention to the psychological and individual characteristics of teachers and learners and have attended not only to psychological characteristics of the learner, but features of the classroom, home, and community that foster learning and promote responsibility

and independence in students. Diverse disciplines have provided educators with information on many types of variables, both proximal and distal, that comprise the knowledge base underlying academic learning.

Correlations Support a Knowledge Base

The handbook chapters and narrative reviews summarized in the content analyses often describe research results without quantifying them, nor do they cover comprehensively all primary studies or employ explicit search criteria in many cases. Meta-analyses, on the other hand, statistically summarize results of many primary studies and use explicit criteria for the inclusion and exclusion of studies. Thus, results from the handbook chapters and narrative reviews are not isomorphic with the meta-analyses. Nevertheless, the magnitude of the correlation between the meta-analyses and the narrative reviews suggests an emergent knowledge base. The moderate correlation of expert ratings with results from both the meta-analyses and the narrative reviews further suggests an emergent knowledge base on influences on learning.

The Relative Importance of Distal and Proximal Variables

Distal variables, like state, district, and school level policy and demographics, have little influence on school learning. This finding is inconsistent with current conventional wisdom which argues for policy-driven solutions, like school restructuring, school-site management, and tougher teacher credential requirements and evaluation, to improve student learning. Characteristics of effective schools have been documented to some extent (Holmes, 1989). Consistent with the findings of this paper, however, recent research is providing evidence of the limited impact of some schoolwide policies, such as special education classification and placement, (Gamoran & Berends, 1987; Wang, Reynolds, & Walberg, 1988) tracking, (Oakes, 1985) and retention (Holmes, 1990; Shepard & Smith, 1989) on student outcomes. The moderate degree of consensus across the three methods of analysis illustrates the common understanding that distal variables have lesser impact. This understanding also contributes to the knowledge base on learning.

Distal variable are at least one step removed from the daily learning experiences of most students. Simply instituting new policies, whether state, district, or school level, will not necessarily enhance student learning. Implementing a policy of maximized learning time, for example, does not guarantee that students in a given classroom will receive instruction from a teacher who plans lessons with special attention to eliminating poor management practices and inefficient use of time. Policies do not always reach down to the classroom level. Effective policies require implementation by teachers at the classroom and student level.

In a recent interview, Cohen (Brandt, 1991) described the work of the National Alliance for Restructuring Education. The organization's efforts to assist in school restructuring for a network of five states and seven districts provides further evidence of the limitations of distal variables and the importance of proximal variables in improving student outcomes. Cohen characterizes proximal variables as equally if not more important than distal variables in tackling school problems. He further maintains that schools should begin solving problems by addressing proximal variables like curriculum, instruction, and assessment that emphasize student outcomes.

Based on the results of content analyses, expert ratings, and meta-analyses summarized in this paper, proximal variables strongly influence school learning. Proximal variables like psychological, instructional, and home environment variables have more impact on learning than most of the variables studied and should be part of an effective strategy to promote student learning.

Key Proximal Variables Influence Student Learning

Key types of proximal variables -- psychological, instructional, home environment -- which exert especially strong effects, are described below.

Psychological. The psychological aptitudes which play the most significant role in school learning are metacognitive, cognitive, motivational and affective variables; each is discussed further. One of the most significant educational findings of the last decade has been the documentation of metacognitive processes that serve to guide students through learning tasks. Many research articles have described metacognitive processes and applications such as comprehension monitoring, strategies to facilitate generalization of concepts, self-regulatory and self-control strategies, cognitive skills instruction, and reciprocal teaching (Segal et al., 1985; Wang & Palincsar, 1989; Weinstein & Mayer, 1986). Research results on metacognition have been especially helpful in developing instructional strategies for children from educationally disadvantaged and at-risk backgrounds (Means & Knapp, 1991). Cognitive processes have also been identified as highly influential. Historically, cognition, whether defined as general intelligence, prior knowledge, or specific subject matter competence, has always been considered of prime importance. That estimation is confirmed by this empirical research and the evaluations of experts. Motivational and affective attributes are now considered cognitive constructs and play a key role in students' perseverance and enthusiasm for learning. All of these psychological attributes are essential to the development of independent, self-regulated learners. Currently, many educational and psychological theorists conceive of learners as architects building their own knowledge structures, a conception that reflects the cognitive paradigm of learning now prominent in the social sciences (Gardner, 1987).

Instructional. Instructional variables exert significant influence on school learning. In the past decade, research on classroom management has demonstrated the effectiveness of a variety of instructional techniques and teacher behaviors in controlling classrooms and enhancing achievement (Doyle, 1986). Examples of classroom management techniques include the prompt and efficient handling of routine tasks, the minimization of distractions and interruptions, having materials ready for use, and handling behavior problems in a manner that is minimally disruptive to the classroom.

One type of classroom interaction that has been linked to student outcomes is the amount and quality of teacher and student academic interactions. Academic interactions promote learning by making students aware of subject-specific knowledge structures and then helping them develop internal representations of those knowledge structures. An example of a teacher and student academic interaction is questioning students. Teacher

questioning can be characterized by the frequency of questions, cognitive level of questions, range of difficulty-level, the kinds of responses encouraged (extended vs. one word), and post-question wait time.

A second type of classroom interaction that has also been linked to student outcomes is the frequency and quality of teacher and student social interactions. When teachers engage students in social interactions, they can model appropriate behaviors, dissuade students from disruptive behavior, and establish a classroom atmosphere conducive to learning. Positive teacher and student social interactions contribute to students' sense of self-esteem and foster a sense of membership in the classroom and school. Social interactions can also include praise and corrective feedback that guide student learning. Not all praise and feedback is initiated by teachers, however; students can also provide feedback and praise to their classmates in cooperative learning situations and through peer and cross-age tutoring.

Home Environment. The proximal variables encompassed by the home environment include not only the educational characteristics of the home, but also parent activities and attitudes that support student learning. Representative activities and attitudes include parents' expression of interest in student school work, participation in school conferences, expectations for students' academic success, and ensuring completion of homework and school attendance. In contrast to distal variables which are more removed from students' day to day lives, the home is central to students' daily experience. Consequently, the home functions as the most salient out of school context for student learning, amplifying or diminishing the school's effect on learning.

Implications for Practice

If practitioners and teacher educators wish to enhance school learning, they must attend to proximal variables such as: (1) psychological variables, especially metacognition and cognition; (2) classroom instruction and management, and student and teacher social and academic interactions; and (3) the home environment. Findings from cognitive psychology, including the importance of prior knowledge, individual aptitudes, and metacognitive processes, should inform teaching. Students' prior knowledge and level of understanding must be taken into account as teachers attempt to structure new content. Individual differences in psychological aptitudes such as verbal fluency, spatial reasoning, and numeracy influence students' ability to perform in school. In order to develop effective lessons, teachers need to determine students' levels of prior knowledge, their relevant psychological aptitudes, and their use of learning or metacognitive strategies. Instructional strategies like reciprocal teaching, cognitive skills instruction, and adaptive instructional systems incorporate the kinds of proximal psychological variables which promote school learning.

Findings on the salience of classroom instructional variables should also inform teachers' practice. Efficient classroom management enables teachers to spend more time on instruction than addressing discipline problems and bureaucratic tasks. The increased quantity of time for instruction is positively related to enhanced student achievement. Teacher and student academic interactions promote learning by allowing teachers to receive more regular feedback about the effectiveness of their instruction and to tailor that instruction to meet the specific needs of their students. Students benefit from academic interactions with teachers by receiving instruction that matches

their prior knowledge, addresses their misconceptions, and organizes knowledge in ways that are meaningful. Instructional techniques such as scaffolding mediate between student's prior knowledge and new content. Just as teacher and student academic interactions foster learning, so do social ones. Teachers should engage in positive social interactions with students to minimize disruptions, to develop an orderly classroom and safe school environment, to encourage creativity and tolerance towards divergent points of views, and to promote the value of learning.

Because of the importance of the home environment to school learning, teachers must also develop strategies to increase parent involvement in their children's academic life. This means teacher should go beyond traditional once-a-year parent/teacher conferences and work with parents to see that learning is valued in the home. Teachers should encourage parents to be involved with their children's academic pursuits on a day to day basis, whether helping with homework, monitoring television viewing, reading to their young children, and simply expressing the expectation that their children will achieve academic success.

The evidence linking distal to proximal variables and to learning is sparse. Distal variables such as district and state policies may set the stage for classroom practices that affect student learning, but findings from the present review provide little supporting evidence. Distal policies are likely to make a major difference in learning only when they affect proximal practices. Indeed, these findings may be reflective of a lack of implementation and/or the complexities that are generally associated with the implementation of distal processes.

Two major findings from the present review suggest important policy implications: the actions of students, teachers, and parents matter most to student learning; policies at the program, school, district, state, and federal levels have limited effect compared to the day-to-day efforts of the people who are most involved in students' lives. Knowing that proximal variables have a greater impact on school learning than distal ones, educators, when formulating policies, should be mindful of where they can make the biggest difference in terms of the student, the classroom, and the home.

CONCLUSIONS

Three huge bodies of evidence suggest that a knowledge base for school learning has been emerging in the last several decades. Hard-won evidence is attributable to efforts of thousands of primary researchers whose contributions can now be synthesized in several ways. Conventional reviews, meta-analyses, and expert ratings show moderate to substantial agreement on the relative sizes of influences of variables on academic learning. This review, however, uncovers some discrepancies among the three sources of information that should be incentives for additional research. It can be hoped that future primary studies and syntheses will produce greater consistency.

Still, there are limitations on the ultimate precision that can be sought. Even in the primary studies, estimates are affected by the validity of measures of the independent and dependent variables, the match between what is

taught and tested, the sampling of students, and other factors. In some instances, however, the greater the shortcomings in validity, the greater the underestimation of effects.

Reviewers choose or are chosen to write about teaching methods and other educational variables that have interested them; selective conceptual biases may be operating. Reviewers may underestimate or overestimate effects; certainly they are affected by their own theoretical and/or disciplinary proclivities, spirit and fads of the times, and methodological limitations and advances. Psychology, for example, has not always preserved a balance among behavior, cognition, and conation.

In projecting future results from the present findings, great caution is necessary. Poorly implemented versions of previously successful practices, especially those shown in special circumstances, are unlikely to work as well. Some practices that work well in some settings and with some students may not work as well with others, although evidence for such exceptionality is easier to hypothesize than to show consistently. The aggregated estimates nonetheless provide one reasonable basis for formulating educational policies and practices. They represent what can be distilled from an enormous body of educational research extending over the last half century; and the independent sources of evidence show reasonable agreement.

Ironically, state, district, and school policies that have received the most attention in the last decade of educational reform appear least influential on learning. Changing such remote policies, even if they are well intentioned and well founded, must focus on proximal variables in order to result in improved practices in classrooms and homes, where learning actually takes place.

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APPENDIX A

Technical Information on the Content Analyses of Research Literature on School Learning

Selection of a Corpus of Studies

The final corpus of studies summarized in the content analyses included authoritative reviews and handbook chapters. The final corpus included journals and books published by the American Educational Research Association, government documents and literature recommended by the Scientific Advisory Board at Temple University. Chapters from the Annual Review of Psychology, the Annual Review of Sociology, Designs for Compensatory Education (Williams, Richmond, & Mason, 1986), the Handbook of Research on Teaching (Wittrock, 1986), the Review of Research in Education, other handbooks, and journal review articles were included to ensure coverage of every category in the conceptual framework. In all, over 200 chapters and review articles were identified and read for possible inclusion, and 179 were selected for coding.

Coding Procedure

The authors developed a 3-point scale to code the strength of each of the 228 variables' relation to school learning. Variables with weak relations to learning were coded 1, those with moderate relations were coded 2, and those with strong relations were coded 3. Variables were coded on the basis of statistical measures (effect sizes/correlations), quantitative measures (the proportions of studies confirming a variable's strength), and qualitative measures (descriptions of results).

For those studies that reported results in terms of effect sizes or correlations, a score of 1 was given if the effect size was less than .10; a score of 2 was given if the effect size was between .10 and .33; and a score of 3 was given if the effect size was greater than .33. For those variables for which quantitative measures were reported, a score of 1 was assigned if less than 40% of the reported studies found a statistically significant relation to a learning outcome; a score of 2 was assigned if between 40% and 80% of the reported studies found a significant relation; and a score of 3 was reserved for those variables in which more than 80% of the reported studies indicated a significant relation. For those items for which no statistical or quantitative indicators were reported, a judgment of weak (1), moderate (2), or strong (3) was made on evidence provided in the document's prose description of the results.

A 15-page coding form was used to record the detailed ratings for each source (handbook chapters, review articles, etc.). Over 2,500 pages of coding forms containing the detailed ratings were completed. Both the page number in the source and the reported strength for each variable were recorded for each citation or discussion. Obviously, none of these sources discussed all 228 variables. In any given source, however, there might be multiple ratings of strength and several discussions or results reported on any

number of the 228 variables. Because the sources coded are handbook chapters and review articles, information on specific features of the primary studies (such as the unit of analysis, grade levels, or subject matter) summarized in these chapters could not be coded--rather, the synthesis focuses on the strength of influences and effects.

The coding process yielded about 10,000 detailed ratings, which were summarized on a summary form for each of the 179 sources. Recorded on the summary forms was an overall mean rating of strength of influence for each of the 228 variables discussed. After calculating an overall mean for each of the 228 variables for a given source, the 10,000 detailed ratings were aggregated into about 3,700 summary ratings which were then statistically analyzed.

Data Summary

The 3,700 summary ratings were further aggregated into 30 categories. As reported earlier, means, standard deviations, alpha reliabilities, and frequency of mention were calculated for these 30 categories. (Wang, Haertel, & Walberg, 1990, p. 34).

APPENDIX B

Technical Information on the Meta-Analyses of Research Literature on School Learning

The findings in Fraser et al. (1987) were compiled from the results of many meta-analyses (or quantitative syntheses). Quantitative results from chapters 2, 3, and 4 were used in the current study. Chapters 1 and 6 were not included because they did not contain quantitative results. Chapter 5 was not included because it summarized the results of chapter 2. The current study used 85 meta-analyses discussed in Fraser et al . Their results were recorded in 23 of the 30 categories of the conceptual framework. Because the meta-analyses summarized in Fraser et al. did not cover all 30 categories, the authors of this article conducted a library search described at the end of this appendix.

Description of the Contents of Fraser et al. (1987) Chapters 2, 3, and 4

Chapter 2, "Syntheses of Research on Factors Influencing Learning," summarized meta-analyses of approximately 2,575 individual studies that identified nine aptitudinal, instructional, and environmental factors that have consistently exhibited strong influences on student learning (See Fraser et al., p. 155, for examples of the studies included). The results spanned 50 years of research conducted within and outside the United States. These results included narrative reviews and quantitative syntheses or meta-analyses summarizing results for each of Walberg's nine productivity factors. In addition, results from three large sets of statistical data on elementary and high school students were included. These data included information from the National Assessment of Educational Progress (NAEP), High School and Beyond, and the International Study of Educational Achievement (IEA). Also included were results from studies of the most effective ways to bring about constructive changes in schools as well as results from case studies of Japanese and American classes, which compared educational productivity in these two countries. Results from the syntheses of the several thousand individual studies were presented as correlations or effect sizes.

Chapter 3, "Contextual and Transactional Influences on Science Outcomes," presented results of meta-analyses of individual bivariate studies conducted within and outside the United States. This chapter focused exclusively on educational productivity in science education. The impact of contextual and transactional factors on science outcomes was synthesized. Contextual factors included, for example, student characteristics, teacher characteristics, curriculum materials, facilities and equipment, home environment, and school climate. Transactional factors included student behaviors, teacher behaviors, external intrusions, instructional research exposure, and classroom climate. The science outcomes studied included student achievement, student attitudes, student skills, teacher change, scientific literacy, and career choices. The research syntheses and meta-analyses summarized in this chapter were based on ERIC's

yearly reviews of science education, Project Synthesis results, and new quantitative syntheses reported in the research literature. (For examples of the meta-analyses summarized, see Fraser et al., 1987, pp. 167-182.) Results from the syntheses were reported as mean correlations, mean effect sizes, or aggregate multiple regression results.

Chapter 4, "Identifying the Salient Facets of a Model of Student Learning: A Synthesis of Meta-Analysis," presented results from 134 meta-analyses of achievement outcomes and 92 meta-analyses of attitude outcomes. The corpus of studies synthesized in this chapter was identified using a computer search of psychological abstracts, dissertation abstracts, and ERIC. Only research syntheses with 10 or more studies related to achievement were included. All results were presented as overall correlations.

Library Search to Identify Additional Syntheses

A library search was conducted to provide coverage for the seven categories not represented in Fraser et al. (1987), as well as to provide results from more recent syntheses. Thirty-six new sources, compiled from journal articles, books, and an ERIC search, were identified as possible supplements. After evaluating the new sources for their type and quality of data, only 12 of the 36 syntheses contained quantitative data. However, because six of the studies reported in Fraser et al. also were reported among the results in the 12 additional research syntheses, only the other six additional research syntheses were added to the corpus. The six additional syntheses did not increase the coverage of the categories of missing data, but they did provide more comprehensive coverage of some of the 228 variables within the 23 categories. The final list of quantitative studies synthesized for the current article is presented in Appendix C.

Description of the Decision Rules Used

Because the results of chapter 4 in Fraser et al. (1987) were not limited to science education (as was chapter 3) and because they contained results from 134 syntheses (including some of those reported in chapter 2), chapter 4 became the starting point for the selection of correlations and effect sizes.

The first decision rule was to scan chapter 4 for those results that most closely matched the definitions of the 30 categories. If a single result matched one of the categories, that result was selected. If several results were reported that matched one of the categories, the statistical average of those results was recorded. In chapter 4, for example, a variety of correlational results was presented that could be defined as cognitive variables; these results included intelligence, general ability, prior achievement, Piagetian developmental level, cognitive ability, and cognitive style. The average of the correlations associated with these variables was computed and recorded for the cognitive category.

For those categories where no match was found, a second decision rule was applied: Scan chapter 2 for those results that most closely matched the definition of the remaining categories. For those categories

where a match was yet to be found, a third decision rule was applied: Scan chapter 3 for those results that most closely matched the definition of the remaining categories. Finally, if after scanning all three chapters and the six additional syntheses identified in the library search, there was no match found for a particular category, the category remained empty and was assigned a missing data value.

Effect Size Transformation to Correlation

The effect sizes (d) were transformed into correlations (r) using the following formula (Cohen, 1969):

$$r = d/ (d^2 + 4)^{1/2}$$

Formula and Procedure in Weighting Mean Correlations

Because each of the mean correlations in this study was itself an aggregated statistic, it represented different numbers of relationships. Weighting allowed those mean correlations based on a large number of relationships to exert more influence in the calculation of the single, weighted mean correlation for the category. Mean correlations based on one or a small number of relationships exerted, then, less influence. For a category combining results from three syntheses, for example, the following formula was employed to calculate the weighted mean correlation (Mw). The mean correlation (r) for each synthesis was multiplied times the number of statistical relationships (n) in the synthesis to arrive at a product. These three new products were summed and then divided by the sum of all the statistical relationships in the three syntheses. This produced the weighted mean (Mw) for the category.

$$Mw = \Sigma(r * n)/\Sigma(n)$$

APPENDIX C

Meta-analyses of Educational Research taken from Fraser, Walberg, Welch, and Hattie (1987). Syntheses of Educational Productivity Research. In The International Journal of Educational Research, Vol. 11, No. 2, and Additional Subsequent Studies.

Aiello, N. C., & Wolfe, L. M. (1980, April). A meta-analysis of individualized instruction in science. Paper presented at the Annual Meeting of the American Educational Research Association, Boston.

Anderson, R. D. (1983). A consolidation and appraisal of science meta-analyses. Journal of Research in Science Teaching, 20, 497-509.

Ascencio, C. E. (1984). Effects of behavioral objectives on student achievement: A meta-analysis of findings. Dissertation Abstracts International, 45, 501A.

Athapilly, K., Smidchens, U., & Kofel, J. W. (1983). A computer-based meta-analysis of the effects of modern mathematics in comparison with traditional mathematics. Educational Evaluation and Policy Analysis, 5, 485-493.

Bangert, R. L., Kulik, J. A., & Kulik, C. C. (1983). Individualized systems of instruction in secondary schools. Review of Educational Research, 53, 143-158.

Bloom, B. S. (1976). Human characteristics and school learning. New York: McGraw-Hill.

Boulanger, F. D. (1981). Ability and science learning: A quantitative synthesis. Journal of Research in Science Teaching, 18, 113-121.

Bredderman, T. (1983). The effects of activity-based elementary science on student outcomes: A quantitative synthesis. Review of Educational Research, 83, 499-518.

Bryant, F. B. (1983, August). Desegregation and black student achievement: Results from a meta-analysis. Paper presented at the annual meeting of the American Psychological Association, Anaheim, CA.

Burns, P. K., & Bozeman, W. C. (1981). Computer-assisted instruction and mathematics achievement: Is there a relationship? Educational Technology, 21, 37-38.

Cohen, P. A. (1981). Student ratings of instruction and student achievement: A meta-analysis of multisection validity studies. Review of Educational Research, 51, 281-309.

Cohen, P. A., Kulik, J. A., & Kulik, C. C. (1982). Educational outcomes of tutoring: A meta-analysis of findings. American Educational Research Journal, 19, 237-248.

Crain, R. L., & Mahard, R. E. (1983). The effect of research methodology on desegregation-achievement studies: A meta-analysis. American Journal of Sociology, 88, 839-854.

Curbelo, J. (1985). Effects of problem-solving instruction on science and mathematics student achievement: A meta-analysis of findings (discovery learning, critical thinking, inquiry, inductive, scientific). Dissertation Abstracts International, 46, 23A.

Druva, C. A., & Anderson, R. D. (1983). Science teacher characteristics by teacher behavior and by student outcome: A meta-analysis of research. Journal of Research in Science Teaching, 20, 467-479.

Dusek, J. B., & Joseph, A. (1983). The bases of teacher expectations: A meta-analysis. Journal of Educational Psychology, 75, 327-346.

El-Nemr, M. A. (1980). Meta-analysis of the outcomes of teaching biology as inquiry. Dissertation Abstracts International, 40, 5813A.

Findley, M. J., & Cooper, H. M. (1983). Locus of control and academic achievement: A literature review. Journal of Personality and Social Psychology, 44, 419-427.

Fleming, M. L. & Malone, M. R. (1983). The relationship of student characteristics and student performance in science as viewed by meta-analysis research. Journal of Research in Science Teaching, 20, 481-495.

Frederick, W. C. (1980). Instructional time. Evaluation in Education, 4, 117-118.

Freeman, H. E. (1984). A meta-analysis of gender differences in mathematics achievement (sex differences). Dissertation Abstracts International, 45, 501A.

Giaconia, R. M., & Hedges, L. V. (1982). Identifying features of effective open education. Review of Educational Research, 52, 579-602.

Glass, G. V., & Smith, M. L. (1979). Meta-analysis of research on class size and achievement. Educational Evaluation and Policy Analysis, 1, 2-16.

Glass, G. V., McGaw, B., White, K., & Smith, M. L. (1980). Integration of research studies: Meta-analysis of research methods of integrative analysis (Final report). Washington, DC: National Institute of Education. ERIC Document Reproduction No. ED208003

Graue, M. E., Weinstein, T., & Walberg, H. J. (1983). School-based home instruction and learning: A quantitative synthesis. Journal of Educational Research, 76, 351-360.

Haertel, G. D., Walberg, H. J., & Haertel, E. H. (1981). Socio-psychological environments and learning: A quantitative synthesis. British Educational Research Journal, 7, 27-36.

Hartley, S. S. (1980). Instruction in mathematics. Evaluation in Education, 4, 56-57.

Hattie, J. A., & Hansford, B. C. (1982, September). Personality and intelligence: What relationship with achievement? Paper presented at the annual conference of the Australian Association for Research in Education, Brisbane, Australia.

Hetzel, D. C., Rasher, S. P., Butcher, L., & Walberg, H. J. (1980, April). A quantitative synthesis of the effects of open education. Paper presented at the Annual Meeting of the American Educational Research Association, Boston.

Horak, V. M. (1981). A meta-analysis of research findings on individualized instruction in mathematics. Journal of Educational Research, 74, 249-253.

Horan, P. F., & Lynn, D. D. (1980). Learning hierarchies research. Evaluation in Education, 4, 58-60.

Hyde, J. S. (1981). How large are cognitive gender differences? A meta-analysis using w^2 and d. American Psychologist, 36, 892-901.

Ide, J. C., Parkenson, J., Haertel, G. D., & Walberg, H. J. (1980). Peer influences. Evaluation in Education, 4, 111-112.

Iverson, B. K., & Walberg, H. J. (1982). Home environment and school learning: A quantitative synthesis. Journal of Experimental Education, 50, 144-151.

Johnson, D. W., Maruyama, G., Johnson, R., Nelson, D., & Skon, L. (1981). Effects of cooperative, competitive, and individualistic goal structures on achievement. A meta-analysis. Psychological Bulletin, 89, 47-62.

Jordon, V. B., & Brownlee, L. (1981, April). Meta-analysis of the relationship between Piagetian and school achievement tests. Paper presented at the Annual Meeting of the American Educational Research Association, Los Angeles.

Kavale, K. (1980). Auditory-visual integration and its relationship to reading achievement. Perceptual and Motor Skills, 51, 947-955.

Kavale, K. (1981). Functions of the Illinois Test of Psycholinguistics Abilities (ITPA): Are they trainable? Exceptional Children, 47, 496-510.

Kavale, K. (1982). Meta-analysis of the relationship between visual perceptual skills and reading achievement. Journal of Learning Disabilities, 16, 165-173.

Kozlow, M. J. (1979). A meta-analysis of selected advance organizer research reports from 1960-1977. Dissertation Abstracts International, 39, 5047A-5048A.

Kozlow, M. J., & White, A. L. (1980). Advance organizer research. Evaluation in Education, 4, 47-48.

Krol, R. A. (1980). A meta-analysis of the effects of desegregation on academic achievement. Urban Review, 12, 211-234.

Kulik, C. C. (1982). Research synthesis on ability grouping. Educational Leadership, 39, 619-621.

Kulik, C. C., & Kulik, J. A. (1982). Effects of ability grouping on secondary school students: Meta-analysis of evaluation findings. American Educational Research Journal, 19, 415-428.

Kulik, J. A., Kulik, C. C., & Cohen, P. A. (1979). A meta-analysis of outcome studies of Keller's personalized system of instruction. American Psychologist, 34, 307-318.

Kulik, J. A., Cohen, P. A., & Ebeling, B. J. (1980). Effectiveness of programmed instruction in higher education: A meta-analysis of findings. Educational Evaluation and Policy Analysis, 2, 51-64.

Kulik, C. C., Schwalb, B. J., & Kulik, J. A. (1980). Programmed instruction in secondary education: A meta-analysis of evaluation findings. Review of Educational Research, 75, 133-138.

Kulik, C. C., Kulik, J. A., & Schwalb, B. J. (1983). College programs for high-risk and disadvantaged students: A meta-analysis of findings. Review of Educational Research, 53, 397-414.

Kulik, J. A., Bangert, R. L., & Williams, G. W. (1983). Effects of computer-based teaching on secondary school students. Journal of Educational Psychology, 75, 19-26.

Kulik, C. C., Kulik, J. A., & Bangert-Drowns, R. L. (1984, April). Effects of computer-based education on elementary school pupils. Paper presented at the Annual Meeting of the American Educational Research Association, New Orleans.

Leong, C. L. (1981). Meta-analysis of research on the adjunctive use of computers in secondary mathematics. Unpublished master's thesis, Ontario Institute for Studies in Education, Toronto, Canada.

Lott, G. W. (1983). The effect of inquiry teaching and advanced organizers upon student outcomes in science education. Journal of Research in Science Teaching, 20, 437-451.

Luiten, J., Ames, W., & Ackerson, G. (1980). A meta-analysis of the effects of advance organizers on learning and retention. American Educational Research Journal, 17, 211-218.

Lysakowski, R. S., & Walberg, H. J. (1982). Instructional effects of cues, participation, and corrective feedback. A quantitative synthesis. American Educational Research Journal, 19, 578-599.

Mabe, P. A., & West, S. C. (1982). Validity of self-evaluation of ability: A review of meta-analysis. Journal of Applied Psychology, 67, 280-296.

Madamba, S. R. (1981). Meta-analysis on the effects of open and traditional schooling on the teacher-learner of reading. Dissertation Abstracts International, 41, 3509A.

Marucci, R. G. (1981). A meta-analysis of research on methods of teaching mathematical problem solving. Dissertation Abstracts International, 41, 2485A.

McEvoy, T. J. (1982). A meta-analysis of comparative research on the effect of desegregation on academic achievement and self-esteem of black students. Dissertation Abstracts International, 43, 3599A.

Niemiec, R. P. (1985). The meta-analysis of computer-assisted instruction at the elementary school level. Dissertation Abstracts International, 45, 3330A.

Parham, J. L. (1983). A meta-analysis of the use of manipulative materials and student achievement in elementary school mathematics. Dissertation Abstracts International, 44, 96A.

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Redfield, D. L, & Rousseau, E. W. (1981). A meta-analysis of experimental research on teacher questioning behavior. Review of Educational Research, 51, 237-245.

Rosenthal, R., & Rubin, D. B. (1978). Interpersonal expectancy effects: The first 345 studies. The Behavior and Brain Sciences, 3, 377-386.

Schimmel, B. J. (1983, April). A meta-analysis of feedback to learners in computerized and programmed instruction. Paper presented at the Annual Meeting of the American Educational Research Association, Montreal.

Shymansky, J. A., Kyle, W. C., Jr., & Alport, J. M. (1983). The effects of new science curricula on student performance. Journal of Research in Science Teaching, 20, 387-404.

Smith, M. L. (1980). Teacher expectations. Evaluation in Education, 4, 53-55.

Steinkamp, M. W., & Maehr, M. L. (1983). Affect, ability, and science achievement. A quantitative synthesis of correlation research. Review of Educational Research, 53, 369-396.

Stone, C. L. (1983). A meta-analysis of advance organizer studies. Journal of Experimental Education, 51, 194-199.

Sweitzer, G. L., & Anderson, R. D. (1983). A meta-analysis of research on science teacher education practices associated with inquiry strategy. Journal of Research in Science Teaching, 20, 453-466.

Tamir, P. (1985). Meta-analysis of cognitive preferences and learning. Journal of Research in Science Teaching, 22, 1-17.

Tohidi, N. E. (1983). Sex differences in cognitive performance on Piaget-like tasks: A meta-analysis of findings. Dissertation Abstracts International, 43, 2943A.

Uguroglu, M. E., & Walberg, H. J. (1979). Motivation and achievement: A quantitative synthesis. American Educational Research Journal, 16, 375-389.

Walberg, H. J. (1982). What makes schooling effective? A synthesis and critique of three national studies. Contemporary Education Review, 1, 23-34.

Weinstein, T., Boulanger, F. D., & Walberg, H. J. (1982). Science curriculum effects in high school: A quantitative synthesis. Journal of Research in Science Teaching, 19, 511-512.

White, K. R. (1982). The relation between socioeconomic status and academic achievement. Psychological Bulletin, 91, 461-481.

Wilkinson, S. S. (1981). The relationship of teacher praise and student achievement: A meta-analysis of selected research. Dissertation Abstracts International, 41, 3998A.

Willett, J. B., Yamashita, J. J. M., & Anderson, R. D. (1983). A meta-analysis of instructional systems applied in science teaching. Journal of Research in Science Teaching, 20, 405-417.

Williams, P. A., Haertel, E. H., Haertel, G. D., & Walberg, H. J. (1982). The impact of leisure-time television on school learning: A research synthesis. American Educational Research Journal, 19, 19-50.

Wise, K. C., & Okey, J. R. (1983). A meta-analysis of the effects of various science teaching strategies on achievement. Journal of Research in Science Teaching, 20, 419-435.

Wortman, P. M. (1983). School desegregation and black achievement: An integrative review. Washington, DC: National Institute of Education.

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Slavin, R.E., & Madden, N.A. (1989). What works for students at-risk: A research synthesis. Educational Leadership, 46, 4-13.

Tennenbaum, G., & Goldring, E. (1989). A meta-analysis of the effect of enhanced instruction: Cues, participation, reinforcement, feedback, and correctives on motor skill learning. Journal of Research and Development in Education, 22(3), 53-64.

Figure 1
Stem-and-Leaf Plots of Residuals

Content – Expert		Content – Meta-Analyses		Expert – Meta-Analyses	
-.4		-.4		-.4	
-.3		-.3	3	-.3	
-.2		-.2		-.2	3
-.1	0015	-.1	0014	-.1	27
-.0	1112358899	-.0	3779	-.0	111235699
.0	000011277889	.0	0112346779	.0	04556689
.1	5	.1	0	.1	248
.2		.2	11	.2	
.3	4	.3	1	.3	
.4		.4		.4	

Table I

Description of Theoretical Constructs, Categories, and Illustrative Variables Incorporated into the Theoretical Framework

State and District Governance and Organization
These categories are associated with state- and district-level school governance and administration. They include state curriculum and textbook policies, testing and graduate requirements, teacher licensure, specific provisions in teacher contracts, and some district-level administrative and fiscal variables.

Category	Illustrative Variable
District Demographics	School District Size
State and District Policies	Teacher licensure requirements

Home and Community Educational Contexts
These categories are associated with the home and community contexts within which schools function. They include community demographics, peer culture, parental support and involvement, and amount of time students spend out of school on activities such as television viewing, leisure reading, and homework.

Category	Illustrative Variable
Community	Socioeconomic level of community
Peer Group	Level of peers' academic aspirations
Home Environment and Parental Support	Parental involvement in ensuring completion of homework
Student Use of Out of School Time	Student participation in clubs and extracurricular activities

School Demographics, Culture, Climate, Policies, and Practices
These categories are associated with school-level demographics, culture, climate, policies, and practices. They include demographics of the student body; whether the school is public or private, and levels of funding for specific categorical programs; school-level decision-making variables; and specific school-level policies and practices, including policies on parental involvement in the school.

Category	Illustrative Variable
School Demographics	Size of school
Teacher/Administrator Decision-Making	Principal actively concerned with instructional program
School Culture (Ethos conducive to teaching and learning)	Schoolwide emphasis on recognition of academic achievement
Schoolwide Policy and Organization	Explicit schoolwide discipline policy
Accessibility	Accessibility of education program (overcoming architectural communication and environmental barriers)
Parental Involvement Policy	Parental involvement in improvement and operation of instructional program

Design and Delivery of Curriculum and Instruction
These categories are associated with instruction as designed and with the physical arrangements for its delivery. They include the instructional strategies specified by the curriculum, and characteristics of instructional materials.

Category	Illustrative Variable
Program Demographics	Size of instructional group (whole class, small group, and one-on-one instruction)
Curriculum and Instruction	Alignment among goals, contents, instruction, assignments, and evaluation
Curriculum Design	Materials employ advance organizers

Table 1 (Continued)

Classroom Practices

These categories are associated with the implementation of the curriculum and the instructional program. They include classroom routines and practices, characteristics of instruction as delivered, classroom management, monitoring of student progress, quality and quantity of instruction provided, student/teacher interactions, and classroom climate.

Category	Illustrative Variable
Classroom Implementation Support	Establishing efficient classroom routines and communicating rules and procedures
Classroom Instruction	Use of clear and organized direct instruction
Quantity of Instruction	Time on task (amount of time students are actively engaged in learning)
Classroom Assessment	Use of assessment as a frequent integral component of instruction
Classroom Management	Group alerting (teacher uses questioning/recitation strategies that maintain active participation by all students)
Student and Teacher Social Interactions	Student responds positively to questions from other students and from teacher
Student and Teacher Academic Interactions	Frequent calls for extended, substantive oral/written response (not one-word answers)
Classroom Climate	Cohesiveness (members of class are friends sharing common interests and values emphasizing cooperative goals

Student Characteristics

These categories are associated with individual students, including demographics, academic history, and a variety of social, behavioral, motivational, cognitive, and affective characteristics.

Category	Illustrative Variable
Student Demographics	Gender and marker
History of Educational Placement	Prior grade retention
Social and Behavioral	Positive, nondisruptive behavior
Motivational and Affective	Attitude toward subject matter instructed
Cognitive	Level of specific academic knowledge in subject area instructed
Metacognitive	Comprehension monitoring (planning; monitoring effectiveness of attempted actions and outcomes of actions; testing, revising, and evaluating learning strategies)
Psychomotor	Psychomotor skills specific to area instructed

Table 2

Classification of the 270 Reviews and Syntheses Used in the Content Analyses and Meta-Analyses

Disciplinary Orientation of Reviews	State and District Governance and Organization	Home & Community Educational Contexts	School Demographics, Culture, Climate, Policies, and Practices	Design and Delivery of Curriculum and Instruction	Student Characteristics	Total Number of Studies	Percent of Studies
Political Science/Policy	14	3	8	4	0	30	11.0
Sociological/Anthropological	1	6	5	0	2	15	5.5
Psychological: General	3	3	4	37	14	84	31.0
Psychological: Cognitive	1	2	0	25	47	93	34.0
Psychological: Behaviorist	0	0	0	6	1	13	5.0
Multidisciplinary*	4	0	5	25	0	35	13.0
Total Number of Studies	23	14	22	97	64	270	100.0
Percent of Studies	9.0	5.0	8.0	36.0	24.0	100.0	

* Examples of studies classified as multidisciplinary include curriculum studies and compendiums of results of educational studies (e.g., What Works, 1986).

Table 3
Average T-Scores for each of the Six Theoretical Constructs

Theoretical Construct	Average T-Score
Student Characteristics	54.7
Classroom Practices	53.3
Home and Community Educational Contexts	51.4
Design and Delivery of Curriculum and Instruction	47.3
School Demographics, Culture, Climate, Policies, and Practices	45.1
State and District Governance and Organization	35.0

Table 4

T-Scores, Average T-Scores, and Number of Sources and Statistical Relationships by Category for the Content Analyses, Expert Ratings, and Meta-Analyses (Ordered from Greatest to Least Average T-Scores)

Category	Content Ratings	Expert Ratings*	Meta-Analyses	Average	Number of Sources in Content Ratings	Number of Statistical Relationships in Meta-Analyses
Classroom Management	59.5	64.9	70.0	64.8	42	15
Metacognitive	60.0	68.0	61.1	63.0	76	186
Cognitive	55.5	58.1	70.2	61.3	101	825
Home Environment and Parental Support	51.9	62.1	61.3	58.4	47	92
Student and Teacher Social Interactions	57.3	56.1	**	56.7	44	**
Social and Behavioral	55.5	55.0	**	55.2	35	**
Motivation and Affective	53.3	64.9	46.2	54.8	81	899
Peer Group	56.4	56.1	49.3	53.9	18	122
Quantity of Instruction	57.3	50.2	53.7	53.7	69	168
School Culture	49.2	57.7	52.8	53.3	49	185
Classroom Climate	56.8	54.2	45.9	52.3	75	734
Classroom Instructional	49.7	59.3	47.2	52.1	156	4095
Curriculum Design	51.0	51.0	52.0	51.3	97	752
Student and Teacher Academic Interactions	51.5	41.9	59.3	50.9	29	14
Classroom Assessment	51.5	52.6	47.3	50.4	61	45
Community	47.4	50.6	**	49.0	15	**
Psychomotor	71.2	36.3	39.3	48.9	6	637
Teacher/Administrator Decision Making	40.7	56.1	**	48.4	21	**
Curriculum and Instruction	52.8	44.3	46.0	47.7	108	1001

Table 4 (continued)

T-Scores, Average T-Scores, and Number of Sources and Statistical Relationships by Category for the Content Analyses, Expert Ratings, and Meta-Analyses (Ordered from Greatest to Least Average T-Scores)

Category	Content Ratings	Expert Ratings*	Meta-Analyses	Average	Number of Sources in Content Ratings	Number of Statistical Relationships in Meta-Analyses
Parental Involvement Policy	41.6	43.1	52.6	45.8	23	1
Classroom Implementation Support	49.2	48.6	39.3	45.7	66	27
Student Demographics	43.0	41.1	50.4	44.8	90	904
Student Use of Out of School Time	53.7	46.6	32.6	44.3	17	274
Program Demographics	55.1	39.5	33.9	42.8	23	725
School Demographics	44.8	36.3	43.0	41.4	25	491
State and District Policies	22.4	32.8	56.0	37.0	19	22
School Policy and Organization	29.5	39.1	40.8	36.5	74	120
District Demographics	32.2	33.6	**	32.9	14	**
Accessibility	***	***	***	***	***	***
History of Educational Placement	***	***	***	***	***	***

* There were 61 respondents who rated each of the 30 categories
** Data were unavailable for these categories; in analyses, they were coded as missing data.
*** The Accessibility and History of Educational Placement categories were removed prior to computation of the T-Scores.

Structures and Strategies: Toward an Understanding of Alternative Models for Coordinated Children's Services

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National Center on Education in the Inner Cities

The research reported herein is supported in part by the Office of Educational Research and Improvement (OERI) of the U.S. Department of Education through a grant to the National Center on Education in the Inner Cities (CEIC) at the Temple University Center for Research in Human Development and Education (CRHDE). The opinions expressed do not necessarily reflect the position of the supporting agencies, and no official endorsement should be inferred.

INTRODUCTION

The soaring number of American children living in poverty has triggered a surge of efforts to improve the coordination of services for children. With the breakdown of traditional family structures, the multiple needs of children and families, particularly in impoverished areas, are of unprecedented proportion. Sadly, our fragmented service-delivery system in urban America is far from adequate in meeting these needs. Many believe that human services institutions in urban environments (e.g., health, education, family social services) can be much more effective if restructured toward a complementary and coordinated system of assistance for children and families.

This problem is much easier to frame than are the structures of and strategies for its solution. There is no one "best way" to restructure human services institutions toward coordination. Although practical savvy about "what works" and "what doesn't" is growing, a great deal remains to be learned about the design and implementation of successful collaborative ventures (Behrman, 1992; Crowson & Boyd, 1993). Toward that end, and building upon our earlier review of the literature on coordination of children's services (Crowson & Boyd, 1993), this paper compares and analyzes features of the models represented in five coordinated services efforts located, respectively, in Chicago, Houston, Los Angeles, Minneapolis, and Charlotte.

The variety of contemporary coordinated ventures is impressive. Efforts to date have ranged from state-level social services coordination, to state encouragement of local coordination; and from city- and county-wide initiatives, to neighborhood and school-site experimentation. Although schools have been involved in most of these projects, relatively little agreement exists concerning the best models for services coordination. For example, disagreement persists as to whether it is more effective for services coordination to be school-based, or based outside the school but closely linked to schooling; or community-based and not directly linked to schooling (Behrman, 1992). Furthermore, approaches to services coordination so far have ranged widely in the scope of services provided, the client populations targeted, the sources of funding, and the very nature of the collaborative relationship (e.g., informal and voluntary, formal and contracted, etc.).

Despite the diversity of approaches to services coordination thus far, many common administrative problems and issues have been faced in much of the current experimentation. Typically, these have included implementation difficulties in such matters as: blending professionals across agencies who have distinct and separate training; loosening up "turf" boundaries between service providers; developing meaningful communication between the collaborating partners; removing "red-tape" and rules/regulations constraining cooperation; and providing leadership in cross-agency situations in which there is little recourse to authority (Crowson & Boyd, 1993).

The commonalities in administrative issues are such that a number of very useful handbooks and guidelines for services integration have been developed. While respecting the diversity of approaches, these handbooks offer valuable suggestions to nearly all projects in such problem areas as the sharing of confidential information, locating funding sources, developing trust between agencies, designing an evaluation system, and involving the community (see, e.g., Bruner, 1991; Melaville & Blank, 1991; Blank, Melaville, & Asayesh, 1993).

These handbooks reflect an accumulation of knowledge on effective implementation of services coordination. They build on a solid growth in the understanding drawn from parallel experiences across diverse efforts, including such lighthouse experiments as "New Beginnings" in San Diego; the "Cities in Schools" projects in more than a dozen states; the "Walbridge Caring Communities" effort in St. Louis; and the "New Futures" interventions in four cities.

What the handbooks and guidelines and experiential evidence to date do not adequately provide, however, are insights into "deep structure" issues in cooperating institutions that may need to be addressed in successful services integration. Though unexamined, such issues are often recognized. It is not uncommon to find in the available handbooks such observations as: (a) "child- and family-serving institutions [must] fundamentally change the way they think, behave, and use their resources"; (b) training should help participants to "unlearn the attitudes and behaviors common in highly bureaucratic, agency-centered, and problem-oriented institutions"; and (c) "the culture inside all institutions and agencies represented on the collaborative must change" (Blank, Melaville, & Asayesh, 1993).

Despite the knowledge gained from experience, we still need to know more about the complex and difficult matter of bringing separate public-sector institutions toward successful collaboration. Talk of "fundamentally changing" the ways in which institutions behave and changing institutional "cultures" recognizes that deeply imbedded qualities of organizations tend to come into play in services-coordination experimentation. Among these deep structures are the separate reward and personnel systems; environmental relationships; operating procedures and conventions; and resource-management systems that uniquely characterize each institution's "lifespace." Difficult enough to fathom as separate institutions, the structures of institutions in processes of coordination can become exceedingly abstruse.

This analysis is enlivened by recent theorizing on the topic of institutional collaboration (see particularly, Gray, 1991; Gray & Wood, 1991; Wood & Gray, 1991). Our major goal is to identify and highlight some central questions to be asked, and some alternative administrative models to be explained within institutional collaboration. It is hoped that our analysis will help frame some of the key questions

to be pursued in the next stage of our research--the development of a survey instrument from which to learn more about the effective design and administration of alternative models for coordinated children's services.

BACKGROUND

There is wide variety and creativity in children's services coordination to date, and, as mentioned, no single best way to proceed. Nevertheless, as experimentation progresses, and indeed as the pace of program development increases, the pros and cons of comparative approaches to services coordination are beginning to emerge. Differences in impact may be associated with variation in the locus of service-provision. A school-based approach benefits from the school's position as a dominant neighborhood institution but can suffer from excessive control by schools. A school-linked approach can more effectively balance school and nonschool contributions but may still be too heavily "institutions-oriented." A community-based model can incorporate a wider diversity of resources and facilities (e.g., churches, community organizations, clubs) but may lose some focus in its dispersion of stakeholders (see Chaskin & Richman, 1992).

A sense of comparative models also can be gleaned from analyses of differing programmatic goals and program outcomes in services coordination (see Wang, Haertel, & Walberg, 1992). Some common programmatic foci to date have been parent education/participation and school-readiness intervention; teen pregnancy and teen parenting collaboration; dropout prevention; substance abuse prevention; and the more generic linkage of an array of services to children and families (e.g., educational, medical, mental health, welfare, employment, legal). In an examination of outcomes among a sample of 55 initiatives arranged by program type, Wang, Haertel, and Walberg (1992) report some early (although varied) evidence of success. They also report, however, that the evidence is insufficient to gauge the extent to which collaboration is a contributing factor in these outcomes.

One important issue raised in our discussion and analysis is the *extent to which coordination among services is necessary and desirable*. The literature on coordinated services tends to be ambivalent. For example, while distinguishing between cooperation and collaboration, Hord (1986) says that both are "valued models, but each serves a unique purpose and yields a different return" (p. 22). She then, however, mars the distinctions by stating that "collaboration is highly recommended as the most appropriate mode for interorganizational relationships" (p. 26).

The five projects included in this examination vary in the degrees to which they approach the rational ideal of full coordination and collaboration, but each nevertheless has achieved some impressive

results. The fact remains that any kind of cooperation is probably an improvement over a total (or almost complete) lack of coordination. Each of the five projects examined, has moved well beyond the stage of simple cooperation and deserves accolades for its accomplishments.

The idea of alternative models for coordinated ventures has been advanced not only by Hord (1986), but also by Intriligator (1992), who suggests that interagency interactions can be usefully examined along a continuum of cooperation to coordination to collaboration. In cooperation, the independence of individual agencies may be affected only marginally, changes in institutional policy and structure are minimal, and "turf" is not a serious issue. Under collaboration (at the opposite end of the continuum), there will be a loss of institutional autonomy; *interagency* policymaking in place of agency independence; and a need to go beyond "turf" toward consensus and well-established trust. Experience in the United States thus far suggests that, rather than either cooperative, coordinative, or collaborative, some efforts have tended simply to be "co-located." Even in co-location, difficult issues can arise over shared facilities usage, managerial control, resource allocation, professions' protection, and information flow.

We have suggested (Boyd & Crowson, 1992) another way of comparing coordinated services, that is, according to their differing styles of administrative implementation. Projects are frequently initiated as *strategic* interventions, pragmatically and iteratively moving toward a goal of coordination and problem-solving as the project unfolds. An alternative model is a strategy of *systemic* reform, where key institutional constraints (e.g., conflicting reward systems, differing norms and conventions, professional training differences) are identified early and incorporated into strategically pre-planned reform implementation.

A more comprehensive comparison of theoretical models for organizational collaboration has been developed by Gray and Wood (1991). They warn that relatively little theory yet exists that adequately addresses interorganizational behavior and relationships. Nevertheless, Gray and Wood do find some worthwhile, comparative explanations embedded in a range of six theoretical perspectives: (1) resource dependence theory; (2) social performance theory; (3) strategic management theory; (4) microeconomic theory; (5) social ecology theory; and (6) negotiated order theory.

In a companion piece, Wood and Gray (1991) suggest a means whereby the array of theoretical perspectives can provide at least the beginnings of a "general theory of collaboration." Key variables identified are: (a) the role of the convener in collaboration; (b) the impact of environmental complexity and control upon collaboration; and (c) the impact of both individual and collective self-interests upon collaboration.

In the pages that follow, we draw on much of this early work as a rough conceptual guide for an examination of a few selected efforts in children's services coordination. Brief profiles of children's services projects ("cases") in five cities are presented below, followed by an in-depth, comparative discussion of the projects from the perspective of institutional analyses.

THE CASES

The profiles presented below are based on information collected through site visits, interviews with project participants, descriptive and evaluative project reports, and presentations and discussions concerning the five projects presented at the National Center on Education in the Inner Cities' (CEIC) invitational conference on "School/Community Connections" held in October, 1992. The five projects are: "The Minneapolis Youth Trust"; the "Nation of Tomorrow" partnership in Chicago; Houston's "School of the Future" initiative; the "Family Service Center" project in East Los Angeles; and "A Child's Place" in Charlotte. Although not a part of CEIC's ongoing study, A Child's Place was represented at the October conference and is thus, included here for comparative purposes.

While these five projects cannot fully represent the current diversity and creativity in coordinated services experimentation, they do provide an instructive range of initiatives. Because they remain in various stages of development, the projects do not necessarily represent unequivocal models of success in services coordination. Still, each represents a significant advance over fragmented, traditional approaches to children's services. We begin our profiles with the Minneapolis Youth Trust, a city-wide, macro-level model. We then turn to profiles of four programs that focus on specific schools.

The Minneapolis Youth Trust

The Youth Trust is a city-wide collaborative organization involving Minneapolis employers, schools, and a number of youth-serving agencies. Formed in 1989, with leadership from the mayor's office, the Trust is focused heavily on strengthening the work readiness and employability of young people in Minneapolis. Self-described, its major goal is helping to prepare "youth growing up in Minneapolis with the skills and experiences needed to become productive workers and successful adults" (Scannapieco, 1992).

The Youth Trust is a partnership of "member" organizations (primarily Minneapolis-area businesses and nonprofit employers) who are asked to support the Trust by contributing annually, developing jobs for youths, and contributing volunteers (primarily mentors) from the ranks of their employees. In 1990-91, some 189 employers were contributing members of the Trust. Additional resources are provided by the McKnight Foundation.

The Trust is an umbrella organization, with three divisions of activity. The first division, the *Buddy System*, recruits adult volunteers from the member organizations to work with children and youth as friends, mentors, or tutors. The Buddy System matches adult volunteers in one-on-one or group relationships through such Minneapolis youth-serving agencies as Big Brothers/Big Sisters, Hennepin County Community Services, the Hmong American Partnership, the American Refugee Committee, and the University YMCA. The second division of the Trust is the *Job Connection*, an effort by members to help youths develop work values, career options, and successful work experiences. Employers provide internships and summer jobs, and work generally to develop the employability of Minneapolis' young people.

The third division of the Trust is *School Partners*, a set of school partnerships between businesses or nonprofit members of the Trust and Minneapolis Public Schools in relationships individually designed to match Trust-member resources to school needs. Some examples are: (a) a partnership between AT&T and Northeast Middle School to improve the development of academic, social, and emotional skills; (b) a relationship between General Mills and Bethune Academy to increase parental involvement; (c) a partnership between Honeywell and North High School to help keep students and teachers abreast of developments in technology; and (d) a relationship between Northeast State Bank and Holland Elementary School to provide employee volunteers and tutors.

As indicators of success, the Youth Trust points to its sizeable list of member organizations and individual volunteers; its great variety of active partnerships, programs, and activities; its success in providing summer jobs and community-service employment; its activities that teach employable skills; and its success in publicizing the work of the Trust. Feedback and evaluation also indicate some areas of concern, especially in clarifying the mission and role of the Youth Trust; in facilitating the collaboration behind the Trust; in establishing clearer and quicker lines of communication; in balancing growth in membership against improving services to members; in evaluating the overall impact of the Trust; and in nurturing good relations among collaborators in the Trust (e.g., among schools and their partners) (Johnson, 1992).

The Nation of Tomorrow, Chicago, Illinois

The Nation of Tomorrow project is a 5-year (1989-1994) partnership between the University of Illinois, the W. K. Kellogg Foundation, four African-American and Hispanic communities in Chicago, and a target public elementary school in each community. The name is derived from a statement made 80 years ago by President Theodore Roosevelt: "When you take care of children, you are taking care of the nation of tomorrow."

With the University of Illinois as initiator and convener, the project attempts to link academia, public schools, parents, and various community agencies in a set of collaborative working relationships. School-based, in a group of Chicago elementary schools characterized by concentrations of poverty and racial isolation, the project seeks to improve children's learning and development as well as to change relationships and connections among key urban institutions.

The Nation of Tomorrow targets four primary elements in children's lives: (1) the family; (2) the school; (3) community child care and youth opportunities; and (4) community health care agencies. The project contains three major program components. The first of these, *Family Ties*, focuses on parent education and involvement in the education of their children at school. Its activities are intended to involve parents, social service providers, clergy, teachers, and other community leaders in developing parent education programs that will be taught by parents in each community. Parent involvement and institutional linkages are facilitated by teams of family advocates who are persons hired from each community.

A second component of the project is *Partners in Health*. This component seeks to promote the health of children and youth using a grassroots community-based approach to assist parents in understanding and taking greater responsibility for the primary health care of their children. It seeks to help parents learn more about the health care services available in their communities, how to gain access to them, and how to make them work in the best interests of their children. The work of this component is conducted primarily through the project's elementary schools by full-time school nurses whose responsibilities are to coordinate and work with teams of family and child advocates hired from within the community.

The third project component, *School Enhancement Activities*, is designed to assist teachers and administrators in each school with their own professional learning and development. The component is based on collaborative models of staff development. It proceeds from the premise that organizational problems in the school must be addressed before significant improvements can be made at the classroom level.

The project is administered by a University of Illinois-based director and staff, and is overseen by an operations board that consists of University, community, and school representatives. Each of the four sites is served by a full-time site director who works out of a project school and serves as a liaison between the University and the community and among community institutions (including the school) involved in the project.

By its second and third years of implementation (1991 and 1992), the Nation of Tomorrow reported some initial accomplishments in the professional development of school staff, particularly teachers, and in the growth of community/parental responsiveness to (and involvement in) services outreach (Dunbar, 1991). Inquiries into administrative issues during this period revealed difficulties common to services-coordination efforts elsewhere, particularly in: effectively moving partners toward collaboration; adapting the separate institutional procedures of partners to collaboration; resolving control and resource issues; and changing actor "mentalities" toward the services-coordination role (Crowson, Smylie, & Hare, 1992; Smylie, Crowson, & Hare, 1992).

Houston's School of the Future

With support from the Hogg Foundation for Mental Health, three of Houston's public schools inaugurated the School of the Future project in the spring of 1990. The schools are a middle school serving grades 6-8, and two K-6 elementary schools. Similar projects were inaugurated simultaneously in Austin, Dallas, and San Antonio. The Houston schools serve concentrations of minority students (largely Hispanic) and communities experiencing critical inner-city problems, such as school dropout, teen pregnancy, substance abuse, inadequate health care, family poverty, and various unmet family needs.

The overall objective of this project is to enrich and enhance the lives of children in each of the school's communities through integration of health and human services; involvement of parents and teachers in the work of the school; involvement of both public and private organizations in the project as partners; and development of a strong commitment to the project among school staff members.

By 1992-93, the School of the Future project was in its third year--with a long list of activities underway to increase parents' involvement in the schools; provide family counseling; enrich the academic and extracurricular offerings of the schools; affect family functioning and student health-related problems; address alcohol and drug abuse issues; and coalesce neighborhood organizations around children/families and their needs.

A central focus of the School of the Future effort from its inception has been careful attention by the Hogg Foundation to research and process/product evaluation. Teams of evaluators, plus one social worker who plays a vital role as site-coordinator at each school, monitor program development and implementation. From this careful evaluation, a useful documentation of some key implementation issues in coordinated services experimentation has emerged. These analyses include some seemingly mundane but nevertheless important problems of finding space in overcrowded schools for added services, finding qualified applicants for newly designed roles as "parent volunteer coordinators," and getting satisfactory Spanish-language translations in the right dialects and vocabularies for each neighborhood.

The implementation problems to date have also included some difficult issues in blending the service additions into the instructional mission of the school, generating teacher commitment to the services-coordination perspective of the project, and overcoming a reluctance among parents to see the school as "a place to go" and indeed as a place where they can actively participate and even exercise leadership (Arvey & Tijerina, 1992).

The Family Service Center, East Los Angeles

The Murchison Street School, an elementary school in East Los Angeles, is the site of a newly developing Family Service Center. The K-6 school is among the

lowest-achieving schools in Los Angeles. It serves a deep-poverty neighborhood of the city; its student enrollment is more than 95% Hispanic.

The project has been initiated by school staff in partnership with the California State University at Los Angeles. The goal of the project is to improve student achievement through efforts to coordinate school and community resources in such a way as to achieve programmatic coherence and improved services for inner-city students and families.

Still in the early stages of implementation in late 1992, the Family Service Center started by opening a parent center within the Murchison Street School. The intent of this effort was to welcome parents, provide parenting workshops, channel parents into school involvement, and offer a resources/referral facility to families vis-a-vis services information.

A second element of the project, still in the initial stages of development in late 1992, is the implementation of a multiservice center at the school site to bring an array of city, county, and community agencies into cooperative alignment with the project. Agencies working closely with the Center early on have included a local community service center, a Latino Family Preservation Project, the University of Southern California Dental School, the California State University at Los Angeles, and two private nonprofit agencies involved in education and treatment for substance and alcohol abusers.

Staff members in the Center are assigned by their home agencies and work with clients on a referral basis. Case managers are employed by the Center to assess family-assistance needs, provide direct services when appropriate, refer families for assistance to appropriate agencies, follow up on referrals, monitor outcomes, and assist with transportation needs (Bilovsky & Zetlin, 1992; Zetlin & Bilovsky, 1992).

A Child's Place, Charlotte

Located in downtown Charlotte, A Child's Place provides education and a range of social services for homeless children and their families. The facility opened in the fall of 1989 in a downtown church, moving in 1992 to space in a nearby public elementary school. The client families and children tend to live in shelters or motels for the homeless in the downtown area.

The plight of the homeless in Charlotte sparked an initiative developed by the executive director of the nearby Travelers Aid Society, who was joined by several social workers at other community agencies. These individuals approached the administration of the Charlotte Public Schools. Additional pressure to "do something" came from influential members of the business community who were serving as board members at some of the community's social service agencies.

The highly transient students at A Child's Place remain an average of just 18 days. While enrolled, the students are provided with medical, dental, and eye exams, and other necessary health services. Clothing is provided as are school and

personal-hygiene supplies. The center also assists in family resettlement and provides parent and child support and counseling.

The staff includes a coordinator, teacher, aide, and social worker (with the designation "family advocate"). The center is supported by the Charlotte Public Schools, corporate donors, and the contributions of private social service agencies. Public social service agencies are not involved.

An enlightening element in the service collaboration aspect of A Child's Place is an ongoing tension regarding its central role. As discussed by Mickelson, Yon, and Carlton-LaNey (1992), the center has been caught in an unresolved balancing of educational and welfare initiatives, which has resulted in difficulties in establishing its identity: Is A Child's Place fundamentally a school for homeless children with some added social-service elements? Or, is the center really a social agency with an added educational component?

The tension's origin might be traced to the fact that the initial staff and governing board emphasized education over social services and was replaced by a staff and board whose emphases are just the reverse. The conflict and tensions are evident regarding time usage; service priorities; planning; day-to-day operations; and the consistency of service "messages" provided client families (Mickelson, Yon, & Carlton-LaNey, 1992).

The cases briefly profiled above represent two projects in which a local university is a key partner, one citywide project initiated with leadership from the mayor's office, one project with very little outside funding, and one project with much direct, initiatory involvement from a private foundation. Each of the projects involves the public school system, but with varying degrees of scope and intensity. The citywide Minneapolis effort employs a number of member-organization partnerships distributed among an array of city schools. The Chicago, Houston, and Los Angeles efforts, conversely, are focused on just one or at most four school sites. The Charlotte program began in a church and is now only incidentally lodged in a school.

The projects also differ somewhat in the degree to which the traditional educational roles and activities of schools are affected by collaboration. The Minneapolis partnerships tend to be "add-ons" with few demands upon educators to change roles or perspectives. The Chicago and Houston projects appear to seek a somewhat more extensive blending of the children's service missions into the instructional behavior of the schools. The Los Angeles effort likewise seeks a change in school missions but through the less intensive procedure of offering educators increased referral options for selectively identified children and families in need. The Charlotte program is as yet unclear as to whether it is primarily a social-service or education provider.

These comparative elements in the profiled cases are summarized in Table 1. It should be noted that all five projects utilize the services of at least one outside organization (often in the role of convener

as well as project participant) causing some expected impact upon the institutional behavior of a school or schools. In its simplest form, this expected impact may be an expansion of the noninstructional array of services to children and families; in a more complex form, the expected impact may be a change in the school's sense of mission and in the school's linkage between classroom instruction and this changed mission. In any inquiry into services coordination, it is important to determine the nature of the coordination's impact upon the school as an institution, and, alternatively, its expected impact upon any other cooperating institution(s).

Again, by no means should it be assumed that the cases profiled here encompass the full range of possible approaches or models for services coordination. Nor should it be assumed that these are all necessarily exemplary projects, deserving detailed replication. Furthermore, a number of other projects elsewhere have received more publicity. Among these are: "New Beginnings" in San Diego; the "Walbridge Caring Communities" in St. Louis; various schools across the nation involved in the Comer School Development Program; the "Success for All" experiments in Baltimore and elsewhere; and projects in four cities identified as the "New Futures" effort under the support of the Annie E. Casey Foundation (see Payzant, 1992; Blank, Melaville, & Asayesh, 1993; Dolan, 1992; Melaville & Blank, 1991; Wehlage, Smith, & Lipman, 1992).

FROM CASE-COMPARISON TO INSTITUTIONAL ANAYLSIS

The Idealized Process of Collaboration

It is no accident that imprecise and confusing terminology is found in services-coordination literature. With little attention to key differences in meaning, projects are interchangeably and variously labeled as efforts toward services coordination, integration, or collaboration. As far back as 1986, however, Hord suggested that there are significant differences in attributes and relationships between coordinative and collaborative arrangements. Much conflict can arise, she concluded, from the simple fact that the individuals involved in a project may be unclear as to *which* model (coordination or collaboration) represents the central expectation (Hord, 1986).

Table 2 summarizes some distinctions Hord (1986) made between the two models. In brief, she suggested that cooperative relationships tend to be greatly influenced by one organization (X), with less than fully comparable involvement and co-equality (resources, communications, leadership, etc.) on the part of another organization (Y). Collaborative relationships, on the other hand, involve fully linked services, and shared resources, expertise, communications, and control. The "product" under collaboration is not a service either X or Y would have provided alone.

Hord's (1986) comparison of cooperation and collaboration helps to clarify the confusion that continues today in establishing the structures of projects through an identifying terminology. Few children's services experiments across the nation, including the five profiled above, are definitively at the cooperative or collaborative ends of the continuum. Each falls somewhere in between.

Many of the projects to date utilize outside funding and an outside "convener" (e.g., a university). These projects typically introduce additional, noneducational services to schools and neighborhoods with the intent of *inducing* many of the processes and characteristics of collaboration identified by Hord (1986). They tend to go beyond the overinvolvement of organization X and minimal involvement of organization Y that is identified by Hord as "cooperation." However, these projects do not reach the shared sense of mission, mutuality, "product," communications, and expertise that Hord identified with "collaboration."

As an illustration, Chicago's Nation of Tomorrow project shows some of the problems accompanying these neither-cooperation-nor-collaboration structures, and points out some of the issues in attempting to move toward (or induce) collaboration. Smylie, Crowson, and Hare (1992) discovered the following, for example: First, the addition of new services to project schools in Chicago added considerably to the burdens felt by building principals, who saw themselves bearing greater responsibility and risk in their buildings and in their communities with insufficient direct control (in their estimation) over the new services. Second, school staff in the Chicago effort are well aware of the foundation-supported (and necessarily short-lived) source of project funds, finding in such a situation good reason to welcome added resources to their buildings but little reason to alter the school's mission and procedures or professional "mentalities." Third, nonschool partners in the Chicago effort (particularly, the cooperating university) evidence their own peculiarities of institutional structure and procedure, often meshing poorly with project objectives or operating procedures of public schools.

In short, the Nation of Tomorrow project in Chicago goes beyond cooperation as defined by Hord (1986) in forcing school staffs (particularly principals) to undergo changes necessary to face new ambiguities and weakened "control" over school/community activities. However, the project is also far from the ideal of collaboration Hord defined in that there has yet to be a merger of educator and other-service-provider "missions," and many institutional-structural barriers remain on the part of both organizations "X" and "Y." Smylie, Crowson, and Hare (1992) conclude in the Chicago case that:

> . . . despite the progress made in introducing activities and services that seem to be benefitting children and families, there has been little integration of the project into the daily functions of the schools. There has been little change in the structure or social

> organization of the schools. Little has been done to establish formal linkages and support systems for collaboration and service coordination. (p. 30)

Again, the Chicago case is not unique (similar findings were reported for the New Futures efforts (Cohen, 1991), and it is our sense that any discussion or development of approaches to children's services coordination/collaboration must acknowledge the fact that most projects are likely to fall well short of the collaborative ideal. This again raises the issue we broached in the introduction of this paper: To what extent, under what circumstances, and for what purposes is full collaboration desirable or necessary?

Gray and Wood (1991) have addressed this question and suggested the need for flexible theorizing that recognizes varieties of collaborative and near-collaborative alliances; comprehensively understands the *process* of collaboration from precondition to outcome; and appreciates important differences in the various interorganizational *domains* of collaboration. A domain of collaboration will reflect the special configuration of organizations in any particular project (e.g., schools, foundations, and universities; schools and corporate partners; schools and other city-service providers; public- and private-service providers).

The borderline existence (somewhere between cooperation and collaboration) of most children's services projects thus far suggests two key questions for further inquiry: (1) Just where is a project procedurally located on a continuum of cooperation to collaboration?; and (2) What evidence exists over time of movement either toward or away from collaboration? Many projects may show uneven progress and some continuing "struggles" among the various elements toward collaboration (e.g., improved communications linkages but little sense of mutual control). It may be out of a careful documentation of these struggles and various surrounding compromises that much added administrative understanding can evolve.

Towards An Understanding of Institutional Structures in Collaboration

To summarize briefly, the state of the art in children's services collaboration has typically not progressed to an idealized point in which participating organizations in projects share completely in the delivery of services, agree fully on goals and outcomes, contribute resources equally, share control and leadership, communicate and interact smoothly, and operate as "we" rather than "us/them."

Rather, it is much more likely that projects will be struggling with problems blending other services into the institutional dominion of the school, reaching a shared sense of mission and shared leadership/control in collaborative ventures, and building effective communicative linkages between the projects' array of service-providers (Crowson & Boyd, 1993).

On the other hand, the extant literature also suggests that many efforts in children's services collaboration may have successfully pushed beyond the minimal coordination stage as defined by Hord (1986). Organizations X and Y in most experiments are both providing resources and leadership. New staff roles are to be found; struggles toward an effective compromise in control and communications issues are typical; and, in most projects, there is at least a sense that a shared product--a product that extends well beyond the narrowly defined 3-R's role of the local school--is a worthy objective.

Indeed, in the Chicago case, an evaluation (Levin, 1991) elicited the following comments from teachers in project schools:

- "In formulating the after-school program, no class level was left out, no age group was treated as less important than another. Even the kindergarten was having input into what they were interested in, which was cultural things. Of course the health component is just marvelous. Having that and having a person who goes into the community and introduces herself to the parents and lets them know that there are services in the community that they can use helps them better manage their lives."
- "They spurred my thinking and desire to do more. We used our own creativity. We were like group leaders, not teachers. We shared and built it together. It was a group effort."
- "I, as an individual, am growing from it. I feel very hopeful that something can be done for these children."

The beyond-cooperation but not-quite-collaboration status of most experimentation to date is well recognized in the handbook and guidelines literature (see particularly, Bruner, 1991; Melaville & Blank, 1991; Blank, Melaville, & Asayesh, 1993). Nevertheless, it is our sense that while a thorough understanding of struggling-toward-collaboration *processes* is vitally important, it is also vital to understand, as thoroughly as possible, the complexities of *institutional structure* that come into play in collaborative ventures.

Thus, the remainder of this discussion works toward a better understanding of the interorganizational domains of collaboration. The focus is on the following key aspects of institutions under collaboration: (1) the convening process (the beginnings of a shared goal structure); (2) institutional interests and reward systems; (3) institutional environments; and (4) institutional conventions.

These four aspects of institutional collaboration, of course, do not capture the totality of the many organizational behaviors that are critically affected by collaboration. Our analysis tends to take a "structures" approach, following the theorizing of the "new institutionalism" school of organizational analysts (particularly March & Olsen, 1984, 1989; Powell & DiMaggio, 1991; and Wilson, 1989). From a social-psychological perspective, we continue to neglect some important issues for collaboration in

professional socialization, administrative leadership, group dynamics, and bargaining/negotiating. These are recognizably important, as indicated in our review of the coordinated services literature (Crowson & Boyd, 1993).

For heuristic reasons, as in our treatment of coordination-to-collaboration as a potential continuum, we suggest that each of our four institutional structures can be usefully conceived in similar "continuum" terms. This notion is summarized in Table 3 in which, quite simply, the suggestion is that institutions effectively moving toward children's services collaboration will begin to give evidence of passing well beyond some "preconditions" in the convening process and will give some evidence of shared institutional interests, environmental adaptations, and institutional conventions. Each of the institutional structures is discussed briefly below, with data from the case studies and some key research questions.

1. Institutions and the Convening (Goal Structuring) Process

Wood and Gray (1991) suggest that any of a number of institutional "preconditions" are necessary for collaboration to occur. These may range from a developing sense of shared resource dependence, to a sense of increased efficiency or cost reduction through collaboration, to a reconceptualization of the "central problem" facing a domain of organizations which motivates collaboration (Wood & Gray, 1991).

Some attention has been given to the goal of increased efficiency in discussions of coordinating children's services, particularly with regard to initiatives at the state level. But little evidence of greater efficiency or cost reduction exists to date as a realistic outcome (see Useem, 1991).

Similarly, there is little evidence thus far of children's services collaboration that grows out of a sense of resource dependency; that is, institutions competing for the same resources attempt to share their mutual "stake" in that base. Indeed, much of the children's services experimentation to date has involved add-ons of extra resources (e.g., from foundations, universities, or corporations) rather than efforts toward a direct sharing of a common base. The effect of this sidecar funding places the struggle toward collaboration within a weakened and short-lived framework.

By far, the most common of the "preconditions" in the literature on coordinated children's services has been a growing reconceptualization of the "central problem" of educating an urban population. In earlier work (Crowson & Boyd, 1993), this was summarized as: (a) a renewed sense of the ecological interdependencies between schools, families, and neighborhoods; (b) a recognition that effective investments in education require complementary investments in children's health, nutrition, family stability, housing, and the social capital of the community; and (c) a renewed sense of the vital

child-development role of the school in blending academics into the social, moral, and emotional development of children.

Although evidence of lengthy discussion among project participants is seldom seen, indications of such conceptualizations of "the problem" are present in four of the five projects profiled earlier:

- The Minneapolis Youth Trust offers its partnerships as "a long-term commitment to the human resource development of Minneapolis youth" (Scannapieco, 1992, p. 2).
- Houston's School of the Future recognizes that family, neighborhood, school, and community service resources "must come together as a working system if they are to be responsive and effective in addressing the challenges for optimal development" of children (Arvey & Tijerina, 1992, p. 7).
- Chicago's Nation of Tomorrow talks about "enhancing the capacities of and functional relationships among multiple institutions with which children interact from early childhood through at least early adolescence" (Smylie, Crowson, & Hare, 1992).
- The Murchison Street School Family Service Center (East Los Angeles) discusses "an integrated client-centered approach for dealing with the multiple problems of inner-city students" (Bilovsky & Zetlin, 1992).

Despite these statements of a central problem behind their collaboration, there is some evidence that many projects find it difficult to build from the precondition of a reconceptualized problem into the sharing (of goals or missions) that characterizes a convening process. Evidence of such a process, Wood and Gray (1991) claim, is to be found when participants actively orient their discussions, decisions, and actions around the "problem domain" that brought them together in the first place.

In a project pursuing a public schools and business partnership toward "the human resource development of Minneapolis youth," for example, some feedback (Johnson, 1992) followed:

- "Getting the partnership off the ground was harder than expected. There were communication barriers along with different work styles, values, and objectives. They don't always match between the two groups. Even the two calendars are so different" (p. 3).
- "The teachers are very hard to stay in touch with. They have short work hours and are usually in the class. They don't have voice mail, which would make our interaction a whole lot easier! For now, we will begin using fax machines more" (p. 3).
- "I am not convinced that partnerships are the way to go. They seem to be a last-minute effort to save our education system--like an emergency room. The problem is very deep. We are willing to take part, but we have to ask ourselves, 'Why are we doing it?'" (p. 8).

Similarly, in Chicago's Nation of Tomorrow project, the conveners, whose goal it was to strengthen relationships among multiple institutions serving children, encountered some of the following difficulties (Levin, 1992):

- A number of respondents feel that there is a conflict between expectations of the Nation of Tomorrow as a project to support the ongoing activities of the school, versus a project which has its own set of activities.
- Participants spoke of a continuing problem of school personnel expecting Nation of Tomorrow staff members to function within the traditional school employee model, with far more supervision and less freedom to come and go as they please.
- The [school] administration does not understand the role of family advocates. They generally see them as social workers, as people to come in when there's a crisis. They don't see them as proactive persons, persons who prevent.

In sum, our theorizing suggests that a key task in moving institutional structures toward collaboration involves success in negotiating a "convening process," a process that may involve some preconditions (particularly the sense of a shared central problem), followed by some progress toward shared goals in addressing the problem. Among the many questions to be asked in further inquiry into the convening process in children's services projects are: (a) To what extent do project participants across cooperating institutions share a sense of the "common problem?"; (b) To what degree is there evidence, over time in ongoing projects, of progress toward a cross-institutional sharing of goals or missions?; and (c) What are some identifiable characteristics of projects that have moved well along a continuum toward a shared sense of goals (e.g., lengthy planning time; explicit written agreements; strong, goal-oriented leadership)?

2. Institutional Interests/Reward Systems

In a classically simple and insightful statement, Edward Banfield (1970) once observed that most political issues arise out of the maintenance and enhancement needs of large formal organizations. In the case of public schooling, such needs can revolve around key institutional interests in protecting jobs, budgets, programs, facilities, turf, and enrollments.

Such interests are usually very closely tied to an institutional reward system. Thus, it is not at all difficult to understand the findings of Morris, Crowson, Porter-Gehrie, & Hurwitz, Jr. (1984) in their study of the Chicago Public Schools: active student "headhunting" engaged in by school principals in an enrollment-driven system of resource allocation and efforts to maintain tight "order" in schools in a system heavily critical of publicity-generating disorder.

Each of the institutional members of a collaborative will bring to the partnership a set of interests rooted in its own reward system. It is principally for this reason that some theorists are wary of school-*based* children's services programs, and instead favor school-*linked* efforts (Behrman, 1992). The argument is that the reward system of the school system will tend to dominate in a school-based endeavor. For the same reason, Kirst (1991) stresses the importance of "glue money" if separate agencies are to be attracted toward partnered services to the same children. The challenges in finding a bit of "glue" are evident in the research literature, which now contains numerous examples of institutional reward systems that pull partners in opposite directions and away from the complementary impact on children that was intended (Crowson & Boyd, 1993).

Institutional interests and the underlying reward system often can be a central part of the "hidden curriculum" of a project, not easily unearthed except through careful, on-site observation. Examples can be drawn from some fieldwork accompanying Chicago's Nation of Tomorrow project, reported by Crowson, Smylie, and Hare (1992), Smylie, Crowson, and Hare (1992), and Levin (1991, 1992).

First, this experiment has wrestled mightily with a structure for project governance that apparently fails to fit adequately into the schools' system of rewards for administrative control. An array of new personnel and school-linked roles have been added by the experiment to each project school--from family advocates, to family health-care experts, to community-services personnel, to school-improvement consultants. Each school site has received the services of a project coordinator as a "unification" specialist.

Not adequately considered, however, has been an institutional reward system that places full responsibility for anything "gone wrong" at the school site on the shoulders of the building principal. The building principal has traditionally been rewarded for remaining fully in control of his or her school, an incentive of even greater saliency under a reform law in Chicago that places the principal's tenure in the hands of each local school council.

Consequently, principals have felt constrained in the Chicago experiment to reach strenuously toward added control of a school site that (under its children's services experimentation) is facing new dimensions of program complexity and ambiguity. Some early feedback has been that:

> "It isn't clear that the schools have each become completely reconciled to all the new actors--to all the new things going on. There may be a sense to some of the principals of activities out-of-control, balanced against their sense of much greater responsibility for it all" (Crowson, Smylie, & Hare, 1992, p. 11).

Or, as one principal commented:

> "I really feel like I'm running two schools. I've got the entire school to run and then this project over here on the side that I'm trying to move . . . I'm taking my time from what I could be doing in the school to do it" (Smylie, Crowson, & Hare, 1992, p. 23).

Second, the Chicago experiment has yet to resolve some key issues in a blending of the institutional interests of its major partners. The University of Illinois, as a key partner, has tended to bring persons to the experiment (faculty and staff members) with extremely flexible time schedules; research and scholarship interests; philosophies of change; respect for worklife autonomy; and a general preference for nondirective and nonhierarchical styles of intervention.

By contrast, as partners, the schools have tended to bring to the experiment severe resource needs; inflexible schedules and time limitations; a teacher-and-pupil classroom orientation; and an administrator-directive style of management. It has been in the interest of the project schools, furthermore, to access the experiment's (foundation-provided) resources as an add-on to the continuing work of the school; but it has been in the interest of the University to utilize the experiment's resources as a bit of school-change leverage.

The strains between interests are reflected in some reaction from project participants. One site coordinator observed:

> "Most school people have never worked independently like we are supposed to do. They [the principals] want someone to watch over our every move. They want us to report to someone as if we are in the military" (Levin, 1992).

A family advocate (a person in an outreach-to-the-community role) noted:

> "The project has been absorbed by the school. We are becoming more and more school personnel. We are extra bodies" (Smylie, Crowson, & Hare, 1992, p. 20).

Similarly, a University faculty member concluded:

> "There's a continuing problem of school personnel expecting Nation of Tomorrow staff members to function within the traditional school employee model, with far more supervision and less freedom to come and go as they please" (Levin, 1992).

In sum, each institution in a collaborative will have many self-interests. These will be rooted in institutional reward systems--systems that can be significantly challenged by the process of collaborating and by encounters with the reward systems of partnering organizations. While it would be highly unlikely to expect cooperating institutions to change their own reward structures fundamentally, movements toward successful institutional collaboration should show progress toward some shared interests and rewards--sufficient to override the "pulling" of separate institutional interests. Among the key questions to be asked are: (a) What identifiably separate institutional interests and reward structures

can be noted in a project among the active institutional "players?"; (b) To what degree can evidence be found, over time, of some common interests in and rewards for collaboration in a project?; and (c) What are the observable effects upon a collaborative project of clashing interests between a "home" organization and its collaborating unit(s)?

3. Institutional Environmental Control

In discussing the development of the School of the Future effort in a Houston middle school, Arvey and Tijerina (1992) note that a "negative community image" of the school was one of the "primary concerns" of project staff. Community memories of a particularly violent incident some 5 years earlier were still being reflected in parental decisions to send their children to magnet and private schools rather than to this neighborhood institution. It was hoped that this negative image could now be changed. Additionally, the project developers sought to address some perceived deficits in community resources in the neighborhoods served by all three of the project schools--particularly the lack of organized activities for children, of places for children to play, and of readily accessible medical clinics or other health care providers in the neighborhoods.

A somewhat different relationship with the community surrounds the Family Service Center effort at the Murchison Street School in East Los Angeles. There, one of the central goals is to effectively strngthen the link between school resources and an array of fragmented services in the community, specifically health, mental health, social welfare, and juvenile justice.

Each of these projects is consistent with philosophies of children's services coordination that stress the importance of school outreach as investments in the "social capital" of their neighborhoods (Coleman, 1988a, 1988b) and/or as recognition of the necessary developmental linkage between education and a range of other complementary social services. Each of these projects is also consistent with a major redefinition of the relationship between the local school and its neighborhood environment--a goal that is now a central tenet of the children's services coordination movement (see Crowson, 1992).

In short, under children's services coordination, both schools and other-services agencies are hard pressed to become newly "environmentalized" (Trist, 1977). Despite a history of other-services provision (e.g., school lunches, medical and dental inspections, guidance) with solid roots in the turn-of-the-century era of Progressive reform, public schools have not been regarded as overly "open" institutions. Indeed, Tyack (1992) argues that school systems have been adept over time at transforming such other-services innovations into "smoothly running parts of the *pedagogical* machinery" (p. 25).

Trist (1977) and, more recently, Gray (1991) observe that institutions acting independently but sharing a common "field" (e.g., providing similar or overlapping services, sharing a clientele, drawing on the same resource base) can add considerably to the "turbulence" of one another's environments. Such turbulence can lead to added recognition of institutional interdependence, but also to much higher levels of both shared and individual uncertainty (Trist, 1977).

Trist's (1977) point is that as the public schools and other social service providers join forces in a given community as cooperating institutions, they are engaging together in a renewed "environmentalization" of their organizational structures. Consequently, they may be engaged in raising their levels of institutional turbulence and uncertainty by a considerable degree.

A public school that confines itself to the 3 R's and follows old dictates of "closedness" to parent/community involvement inhabits an environmental "niche" all its own. But a public school that shares space with the parks department, operates an on-site community health clinic, sends social workers out into the neighborhood, opens its doors to parents and volunteers, offers after-school tutoring and recreation, and liaises with the local library, finds itself in an environment of much finer complexity. Not only do school rules and regulations, in this case, define its professional lifespace, but health, recreation, social work, and library rules must henceforth be considered as well. In this instance, not only does a politics of schooling characterize its activities, but politics of other professions and the neighborhood also become defining characteristics of the school's institutional persona.

In the most recent of the handbooks written for those who would undertake coordinated services experimentation (e.g., *Together We Can*, by Blank, Melaville, and Asayesh, 1993), the added environmentalization that can accompany collaborative ventures is fully recognized. With political astuteness, the authors urge that: (a) care be taken to bring *all* of the stakeholders fully into a partnership; (b) a "web of alliances" be developed; (c) written agreements between partners be carefully negotiated and formalized; and (d) an information/governance plan be sure to reach decision makers of all levels of authority (Blank, Melaville, & Asayesh, 1993).

Nevertheless, the effective accommodation of the new environmentalization of partnering institutions under services coordination remains a central issue. First, there is evidence, per Tyack's (1992) historical observation, that projects to date have encountered a tendency by educators to "institutionalize" services coordination under education's pedagogical persona.

For example, in a study of British experimentation Johnson, Ransom, Packwood, Bowden, & Kogan (1980) report that after nearly two decades of a British amalgamation of children's welfare, health, and education services, "long-standing issues such as the ways that teachers, education welfare officers,

social workers, and other supporting services worked together were unresolved" (p. 1). Furthermore, teachers in the British experiment--accustomed to thinking of children in classroom lots and to maintaining a sense of boundary between school, home, and other-service agencies--had great difficulty in reconceptualizing their roles in more "pastoral" or care-giving terms and in valuing the work of other-service professionals as highly as their own (pp. 95-97).

The most clear-cut example from field records of a struggle over the educational institutionalization of a children's services endeavor comes from the work of Mickelson, Yon, and Carlton-LaNey (1992) in describing A Child's Place. The authors note that the initial director was a professional educator who:

> . . . was a stern disciplinarian [and] believed that her role as teacher was part of her "ministry"; that it was God's will that she teach these homeless children. She also believed that the children needed to be taught that there were consequences for their actions because "the reason they were homeless was that their parents had never learned that lesson." (p. 17)

A replacement director saw the role more in terms of coordinating services, but the result was a loss of attention and an estrangement from the program's pedagogical players. Mickelson, Yon, and Carlton-LaNey (1992) conclude that the tension between the social service staff and the educational staff persists.

Likewise, in an examination of the Nation of Tomorrow project in Chicago, Smylie, Crowson, and Hare (1992) observe that:

> . . . project participants have observed that a number of the "school people" have had difficulty "getting their heads around" the project's philosophy, and have had difficulty reconceptualizing the work of the school in terms that go beyond classroom instruction within the school's "four walls." As an example, there were reportedly some strains in the health services component of the project when added nursing resources were interpreted by school personnel as new (but traditional) school-nurse resources. The newly added nurse-professionals themselves, however, saw their responsibilities as proactively "bringing the community in" as part of a "community model" of school nursing. (pp. 13-14)

Second, there is often evidence of an unresolved placement of environmental fallout in back-and-forth negotiations between key institutional partners in children's services coordination. In our first example above, drawn from Tyack (1992), the suggestion was that institutions--often schools--can try to redirect environmental turbulence and bring it under control within their own orbits. Here, the suggestion is that new conflict-ridden domains of environmental turbulence can be raised.

In the literature, perhaps no aspect of collaboration illustrates this second condition quite as well as the issue of confidentiality of information. There are real and important considerations among service

providers in the sharing and pooling of information about children and families. For good reason, confidentiality restrictions are well rooted in Constitutional guarantees of personal privacy, and in statutory provisions as well as in the ethical standards of the differing professions. This exists despite equally good reasons why shared information is vital for continuity in children's services delivery and more efficient and effective use of child-assistance resources (see Behrman, 1992; Kahne & Kelley, 1991; Joining Forces, 1992).

Family consent agreements and release forms, plus careful guidelines on security of access and data parameters allowed in automated information systems, are among the proposed solutions. Nevertheless, the more critical deep-structure issues between cooperating institutions go beyond release forms to environmental turbulence issues of a feared loss of turf control, a distrust of other professionals' use of "our" information, and sets of ethical and legal concerns (including fears of lawsuits) when information leaves any of a number of traditionally tightly closed systems. Indeed, information on their clients constitutes the most significant of "property rights" held by each of the professions. Property rights protect the very basic value of a service or commodity that one has available for exchange (see Demsetz, 1967).

A direct example of the environmental threat to established property rights is provided in the Crowson, Smylie, and Hare (1992) examination of Chicago's Nation of Tomorrow project. In this example, a provision of the children's services project results in environmental tension for the employment services arm (civil service) of the project's partnering university. The authors write:

> One of the most innovative and well received of the project components involves the direct employment of persons from the communities surrounding each project school. These community representatives, with training, engage in a variety of "outreach" activities with parents as part of the project's "family-ties" component. The activities range from running tutoring and training programs, to offering information about child care and child development, working with latchkey children, helping parents find jobs, offering language (bilingual) assistance, and being a friend and resource to parents, one-on-one.
>
> The community representatives are paid on a full-time basis by the University at a "civil-service" level commensurate with their formal experience and qualifications. The resulting civil service pay rate is exceedingly low, at the bottom of civil service categorizations. It is considered an embarrassment to project officers and is reportedly a source of tension with the recipients of these wages--for the representatives feel undervalued and overworked [in comparison to the pay and work of school personnel]. Thus, the seemingly simple and straightforward (and presumably non-risky) task of paying the people who work on a project (at an established rate) finds the stable arrangements of a civil service system apparently unadapted to project needs (pp. 16-17).

In sum, children's services collaboration raises additional environmental issues for each of its institutional partners. There is a tendency for one or more partners to attempt to "institutionalize" the resulting environmental turbulence within its ongoing structures (e.g., to pedagogize services coordination or to use an unaltered civil-service system). There also can be a tendency for environmental turbulence to lead to and reflect a loss of environmental control among the partnering institutions, with conflicts which may or may not be resolved in a newly shared "environmentalization." Among the key questions to be asked in further inquiry are: (a) What evidence of environmental tensions, or "turbulence," is to be found in ongoing children's services coordination projects?; and (b) What evidence can be found of efforts to incorporate environmental issues into ongoing institutional structures versus creating newly shared structures of collaborative environmental control?

4. Institutional Conventions

Institutions serve an extremely important function for those who work within them--the function of imposing elements of order upon what might otherwise be an extremely ambiguous and, in the terminology of March and Olsen (1984), "potentially inchoate world" (p. 743). An institution's special "order" is to be found in its unique history, its allocations of time, the management of its external environment, its normative structures, its special demographic characteristics, and its symbolic behavior (e.g., its ceremonies, stories, and rituals (March & Olsen, 1984).

It would not be inconceivable for each of the partners in a children's services cooperative to bring to the partnership a near-fundamental difference in institutional order. Compare, for example, some of the conventions of health care institutions (especially hospitals) with those of public schools. Increasingly, visitors in hospitals are recognized as valuable elements in the healing process. Although there are often sign-in procedures and visiting hours, these rules with frequency, loosely observed. Increasingly, close family visitors are increasingly permitted to stay overnight, and quasi-nursing roles are often allowed for them. By contrast, though the public schools are surely a bit more welcoming than in years past, and some (often tutorial) roles are now granted to frequent visitors, the visitor in education is still not typically regarded as integral to the learning process; the "Visitors Report to the Office" sign is still taken seriously. Some other key differences in conventions include:

1. The hospital summons its best, organizes itself around, and coalesces its resources for crises (emergencies). The public school typically seeks to avoid any hint or a charge of a crisis--a term best avoided in the greater interest of long-term development.

2. The hospital uses "pull out," specialist services as an integral part of a diagnosis and "whole" recovery for each patient. Despite the IEP (Individualized Educational Plan) tradition from special education, the public school tends to fragment its professional services. Moreover, regular classroom teachers often resent the "pull out" work of specialists as time lost to what they regard as the "real work" of the institution.

3. In health care, the most important people are not necessarily those who "live" occupationally in the human-service institution. Many persons, especially physicians, use the institution as a base but have a practice (and spend much of their day) elsewhere. In public schools, the most important people do "live" in the institution, and are closely tied (careerwise, psychologically, etc.) to the day-to-day affairs of the organization. In the first case, primary loyalties to the organization may be less important to effective service-provision than in the second.

4. In health care, there is frequently much more procedure, ritual, rule-following, and care taken at the "intake" end of service provision than at the service-leaving or "release" end. In public education, clients are not released; rather, their completion of program at the "outtake" end is specially celebrated, often with close friends and relatives joining in an often large-scale assembly. In the first instance, emphasis is on preparation for service, with client diagnosis and needs primary; in the second instance, the emphasis is on evidence that the client has met the institution's standards for performance.

Key differences in the daily drama of public-service institutions are also found between public schools and criminal justice; public housing; parks and recreation; child-protection; and family assistance institutions (see Lipsky, 1980). Again, these differences are a central part of the distinct order of each institution.

There has been some recognition in the children's services literature, particularly by Gardner (1992), and Kahne and Kelley (1991), that the tensions emanating from the comparative institutional conventions of cooperating organizations can be of serious concern. Nevertheless, there has been relatively little in-depth investigation into the problems of (and issues in) bridging these potentially noncompatible institutional structures, even when, in many cases, a change in convention is central to the very philosophy of services coordination.

For example, one of the central tenets of coordinated-services improvement is the recognition that the timing of services to families is currently far from optimal. Earlier interventions might prevent later crises. Yet, the system of queuing that currently exists in many service arenas often results in the development of crises before special services are provided (Melaville & Blank, 1991; Larson, et al., 1992). Interestingly, in response, schools in inner-city environments have increasingly lengthened the school day, year, and even week. For example, many schools are now open both earlier and later in the

day, into summer, and on Saturdays. The age at which children begin school has also been extended downward into the "child-care" years. These alterations result in a new stress on the child-development role of the school.

Despite the push toward school-based and school-linked coordination, the timing of needed services for children and families generally conforms poorly to education schedules. Late nights, weekends, and hot summers are often times of greatest need. Services provided at these times often do have a crisis origin, but out of crisis may also come a receptivity to prevention. The timing of a child-development and prevention orientation is a far cry from the timing of a services orientation that must be there as events unfold, respond quickly and comprehensively to needs, and be as effectively reactive as proactive.

Some meaningful differences in convention between participating institutions can be seen in the projects under review for this report. Excerpts from interviews with both business and educator participants in the Minneapolis Youth Trust, for example, give a flavor of the barriers to cooperation in educator versus business lifeways (Johnson, 1992):

- "Getting the partnership off the ground was harder than expected. There were communication barriers along with different work styles, values, and objectives. They don't always match between the two groups. Even the two calendars are so different." (p. 3)
- "We've had a hard time setting meetings. The partnership involves a lot of busy people. Currently, we don't have regular meetings." (p. 3)
- "Employees tend to be too busy to commit to a weekly time. We need to be more creative to see how we can better work with time constraints." (p. 4)
- "Teachers are overwhelmed. Meetings are back to back with classes and teachers often come in 'frazzled,' not ready to switch gears." (p. 4)
- "Businesses lack the awareness about what is meaningful in the lives of children at different ages. This is a barrier to planning activities." (p. 6)
- "Teachers are not used to running meetings efficiently, keeping on task." (p. 6)

Houston's School of the Future project has placed a very heavy emphasis on the involvement of parents as one key group of project "partners." Highlights from a report by Arvey and Tijerina (1992) indicate that differences in convention between school and community can also be imposing barriers:

- One incident that really brought home the differences in the expectations of planners and the experience of the people affected was the first partnership luncheon. Our parent representative, a woman actively involved for the past 5 years in her children's school and a perceived leader among parents, had never before attended a "luncheon." (p. 26)

- . . . parents had no indication of what was expected. There were strong cultural norms that made it difficult for a woman to feel comfortable in a leadership role outside the home. The very language--organization, procedures, goals, objectives, priorities, planning, motions, and consensus--was not within the language or experience of these parents. Even when schools provided babysitters and stipends for child care or transportation, women did not participate. (p. 25)

In summary, daily life in every institution has a special rhythm. The rhythms of an institution's behavior are reflected in its use of time, in the "queuing" or time-processing of its clients, and in the time constraints that develop around the activities of its inhabitants. Institutional rhythms are also reflected in the various conventions that together help to establish each institution's sense of order, including such elements as: what institutions separately "celebrate"; what they consider vital to getting a job done (e.g., efficient, on-task meetings versus time alone to plan and prepare); what discourse language is used to describe the work of the institution; and what expectations of behavior/performance surround those who serve and are served by the institution.

Institutional conventions can be so fully integrated into work lives that they seem "natural." Thus, it may not be readily apparent that use of the word "luncheon" can be a barrier to school-community relations or that the less-than-efficient and only vaguely task-oriented meetings of educators can be frustrating to partnering businesspeople. Among the key questions which emerge in this arena of institutional-structure concerns are: (a) What identifiably separate institutional "conventions" of possible importance to collaboration can be noted among the partners in ongoing services-coordination projects?; (b) Is there evidence in the ongoing projects of separate institutional conventions that are in some degree of conflict with collaboration?; and (c) To what extent is there evidence of a coming-together of differences in institutional conventions under collaboration?

CONCLUSION

Table 4 succinctly summarizes the theoretical framework we suggest as a guide to further inquiry. Every experiment in children's services coordination can be examined first as a point along a *process* continuum, from little-to-no integration of services to a collaborative ideal, and then as an exercise in the impact of institutional *structures* upon the administrative effort.

Most experiments to date have achieved some success toward collaboration, but few have progressed to any noticeable degree toward the "ideal." The determinants and characteristics of progress on the process dimension of collaboration are still underexplored terrain. Coincidingly, though, is the question of the extent to, and the circumstances under which, full collaboration is desirable or necessary.

While many institutional characteristics may be of importance to a structural analysis, our review suggests that four are essential: (1) goal structures; (2) institutional interests; (3) environmental controls; and (4) institutional conventions. Significantly, these are among the elements described by Sarason (1990) as the most "intractable" of organizational characteristics in school reform. Every venture in children's services coordination is likely to struggle informatively (and often creatively) with issues crucial to our knowledge base in moving from institutionally *distinct* structures toward those that are institutionally *shared*.

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TABLE 1

CASE-COMPARATIVE STRUCTURES OF COLLABORATION

	Convening Organization	Institutional Focus	Extensiveness of Planned Collaboration
Minneapolis Youth Trust	Mayor's Office	Selected schools, city-wide	Added services for participating schools
Nation of Tommorow (Chicago)	Area University	Four inner-city schools	Simultaneous emphasis on children's services & school/ instructional improvement
School of the Future (Houston)	Foundation/School District Partnership	Three central-city schools	Integration of health/human services into the school mission
Family Service Center (East Los Angeles)	Area University/School Partnership	A central-city school	Services at the school site for children & families, plus goal of improved student achievement
A Child's Place (Charlotte)	Private Social Service Providers	A school-based center for a special clientele	Unresolved conflict in mission between social services & education

TABLE 2

DISTINCTIONS BETWEEN ORGANIZATIONAL COOPERATION AND COLLABORATION*

	Cooperation Model		Collaboration Model
	Convening or beginning processes		
1.	Organization X approaches organization Y for assistance, tolerance, and cooperation in completing a task. Minimal contribution of resources is expected from Y. X completes the task (develops a "product") as a result of cooperation with Y.	1.	Organizations X and Y agree on a shared product or service, and join forces to plan/execute it. Organizations agree on goals and on projected results or outcomes.
	Institutional focus/ownership		
2.	X provides resources and expertise; Y provides access and setting. X often arranges funds and may pay Y for contributions.	2.	Both organizations contribute staff, resources, and capabilities. Mutual funding is obtained.
3.	Control continues to be lodged separately in each organization; leadership from one of the organizations is characteristic.	3.	Shared, mutual control develops; dispersed or delegated leadership is characteristic.
	Process requirement/characteristics		
4.	X determines the nature of communication, conveys information to Y, and responds to requests from Y.	4.	Communication interactions and roles are established; channels and "level" of communication are clarified.
5.	X undertakes the bulk of the project's activity with permission from Y.	5.	Both organizations spend time and energy. Expertise/action is contributed by each side. A combined staff comes into being; trade-offs are arranged.
6.	An "us/them" process mode develops.	6.	A "we" process mode develops.
	Product		
7.	A product or service is essentially produced by X, but Y may be able to use it and may benefit from it.	7.	A shared product or service emerges, one not possible if X and Y had approached the task as separate agents.

*Adapted from: Hord, S. M. (1986). A synthesis of research on organizational collaboration (Figure 1). Educational Leadership, 43(5), 24-25.

TABLE 3

INSTITUTIONAL CONTINUA TOWARDS CHILDREN'S SERVICES COLLABORATION

1. Institutions and the Convening Process

   From Preconditions ----------> to the Convening Process

2. Institutional Interests

   From Institutionally Separate Interests ----------> to Shared Collaborative Interests

3. Environmental Control

   From Institutionally Separate Environmentalization ----------> to Shared Environmentalization

4. Institutional Conventions

   From Institutionally Separate Conventions ----------> to Shared Collaborative Conventions

TABLE 4

STRUCTURES AND STRATEGIES: TOWARD AN ANALYSIS OF ADMINISTRATIVE ISSUES & ALTERNATIVES IN CHILDREN'S SERVICES COLLABORATION

The Institutional Structures Dimension	The Process Dimension: Separate Institutional Service Provision	The Process Dimension: Institutionally Collaborative Service Provision
Goal Structures	Minimal agreement on nature of the "problem"	Shared sense of problem & shared goals
Institutional Interests	Institutionally self-interested	Common institutional interests & merged reward structures
Environmental Controls	Independent environmental accommodations	Interdependent environmental accommodations
Institutional Conventions	Identifiably distinct conventions	Blended or shared institutional conventions

Family Processes, Family Interventions, and Adolescent School Problems: A Critical Review and Analysis

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The research reported herein is supported in part by the Office of Educational Research and Improvement (OERI) of the U.S. Department of Education through a grant to the National Center on Education in the Inner Cities (CEIC) at the Temple University Center for Research in Human Development and Education (CRHDE). The opinions expressed do not necessarily reflect the position of the supporting agencies, and no official endorsement should be inferred.

INTRODUCTION

Few would deny the power of the family on adolescent values, beliefs, and behaviors. Recent research in the fields of adolescent development and education demonstrates the salience of parental influence during the second decade of life, especially with respect to academic achievement, politics, values, and religious beliefs (Baumrind, 1978; Kandel & Andrews, 1987; Hill, 1980; Steinberg & Levine, 1990; Rutter, 1980). Although family status variables such as class, structure, size, and ethnicity have been strongly and consistently linked to school outcomes among both adolescents and younger students (see Hess & Holloway, 1984 for a review), these variables fail to delineate the mechanisms which directly influence cognitive development and school performance (Epstein, 1989; Scott-Jones, 1984). Rather, there is a growing consensus that family status variables influence academic achievement through their impact on significant family processes such as child-rearing practices; parent beliefs, values, and teaching strategies; and the degree of parent involvement in a child's education in particular and, more generally, in daily life (Christenson, 1990; Scott-Jones, 1984; Epstein, 1989; Hess & Holloway, 1984; Steinberg, Brown, Cider, Kaczmarek, & Lazzaro, 1988). Consequently, basic research studies included in this review will be limited to those which focus on these more potent family variables.

In addition this review will also cover relevant applied research on various intervention models. Whereas a body of research on the family's influence on adolescent academic achievement and school adjustment is rapidly developing, there is no such similar growth in the development of family-based prevention and intervention models. Of the papers published on this topic during the last decade (which numbered fewer than 100), most were anecdotal reports or case studies. Less than 10 were empirically based studies of models designed to prevent or treat adolescent academic failure, truancy, dropout, and other school problems. Given this current state of affairs, this paper will critically review: (1) research on the family's influence on adolescent academic achievement and other related school outcomes (focusing on family process rather than status variables); and (2) the few existing empirical studies of relevant prevention and intervention programs. Inferences will be drawn from the family influences literature and from other relevant literatures (i.e., treatment and prevention of adolescent drug abuse and delinquency) to further the development of family-based prevention and intervention models for adolescent school problems.

Family Processes Research

The quality of the parent-child relationship during adolescence has important influence on adolescent functioning in cognitive, emotional, and behavioral realms. Aspects of the parent-adolescent relationship such as intimacy, involvement, and control, are significant correlates of adolescent school

adjustment and achievement (LeCroy, 1988; Epstein, 1989; Steinberg, Elmen, & Mounts, 1989). Research on family processes has identified salient factors which impact these crucial features of the parent-teen relationship. These include: (1) parenting style; (2) parental aspirations; and (3) parent involvement in education.

Parenting Style

Baumrind's now classic studies (1967, 1971, 1973, 1978) identified three parenting styles: (1) authoritative; (2) authoritarian; and (3) permissive. Authoritarian parents exercise firm control, allow little verbal reciprocity, and place high maturity demands on their children. Permissive parents, by contrast, are warm and affirming with their children. They make few maturity demands, grant a certain amount of autonomy to children in family decisions, and give explanations for family rules. Authoritative parents combine firm control with high levels of warmth and reciprocity. They are protective but not intrusive, allow verbal give-and-take between family members, yet consistently require their children to contribute to family functioning by helping with household tasks. In a series of studies conducted over a 20-year period, Baumrind (1991) concluded that children of authoritarian and permissive parents lacked competence when compared with children from authoritative homes.

In recent years, the study of the impact of parenting style and practices on children's behavior has expanded to the examination of adolescent school performance (Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987; Steinberg, Elmen, & Mounts, 1989; Steinberg, Dornbusch, & Brown, 1992; Steinberg, Lamborn, Dornbusch, & Darling, 1992). In the first of these studies, Dornbusch et al. (1987) found that parenting style, as typologized by Baumrind, was associated with grades across a wide variety of social categories (e.g., sex and age of the adolescent, ethnic background, socioeconomic status, family structure, and parents' education). Children from families high in authoritarian or permissive parenting generally got lower grades in high school in comparison to children from families high in authoritative parenting. Furthermore, Steinberg and his colleagues argue that authoritative parenting also positively influences adolescents' attitudinal and behavioral indicators of academic orientation, including work orientation, engagement in classroom activities, educational aspirations, feelings about school, time spent on homework, academic self-concept, and school conduct (Steinberg et al., 1992; Lamborn, Mounts, Steinberg, & Dornbusch, 1991; Steinberg, Elmen, & Mounts, 1989).

Although the majority of studies on parenting practices have been limited to European-American, middle-class students and their families, and other evidence suggests that the benefits derived from having authoritative parents is stronger for European-Americans than for African-American, Asian-American,

and Latino families (Steinberg, Dornbusch, & Brown, 1992; Steinberg et al., 1992), researchers have increasingly addressed how race, class, and gender impact the association between parenting practices and adolescent school outcomes. Steinberg, Dornbusch, & Brown (1992) illustrate an intricate pattern among ethnicity, parental influence, peer influence and school success. Although, they found that adolescents whose parents are authoritative are more successful in school than their peers who come from families that are not authoritative, they also found that such parental influence was moderated by peer interactions in the context of ethnicity. The benefits of an authoritative family structure among African-American students was offset by a peer group which did not support academic achievement; hence African-American youth performed more poorly in school than did their Caucasian and Asian-American counterparts. Among Asian-American students, it was exactly the opposite; the negative effects derived from an authoritarian family was offset by peer encouragement to achieve in school. The school performance of Latino students suffered from the detrimental effects of authoritarian parenting practices and peer nonsupport, while Caucasians benefitted from both authoritative parenting practices and peer support.

In another study which considered ethnicity, Dornbusch and Ritter (1987) investigated the relationship among parenting style, family structure, effort in school, and grades. Effort was related to grades in all gender and ethnic groups with one striking exception. There was no relation between effort and grades among African-American males from single-parent families who demonstrated an authoritarian style of parenting. Given the findings from this study and others (see Steinberg, Elmen, & Mounts, 1989), one might speculate that authoritarian parenting in single-parent African-American families hinders the development of a work orientation among boys. It can be reasoned, then, that boys without a well-developed work orientation and without the corresponding belief that school failure will lead to serious negative life consequences (see Steinberg, Dornbusch, & Brown, 1992) would conclude that effort is not associated with achievement in school.

Bowman and Howard (1985) propose race-related socialization practices in which parents orient their children toward academic effort. In their study of African-American youth, two-thirds of the subjects reported their parents transmitted some message about their racial status. Four parental socialization themes emerged as messages about: (1) racial equality; (2) racial pride; (3) self-development; and (4) racial barriers. Parents' emphasis on self-development (such as individual excellence, character building, and self-reliance) was found to significantly impact youths' sense of personal efficacy as compared to parents who gave no orienting messages. In addition, youths socialized to be cognizant of racial barriers attained higher grades than those who were taught nothing about ethnic

issues. These findings may offer some explanation to the relationship between parenting, ethnicity, effort, and grades which Dornbusch and Ritter (1987) investigated. Perhaps authoritarian parenting thwarted the academic effort in black males in this study by the parents' failure to transmit proactive orientations toward blocked opportunities. Without such proactive strategies, it may be that the youths' sense of personal efficacy was negatively affected such that effort in school was perceived to be futile. Conceivably parental style may interact with race- and ethnicity-specific socialization practices to facilitate (or hinder) achievement motivations and behaviors in ethnic minority youth. Future research would need to be conducted to identify the mechanisms by which authoritarian, authoritative, and permissive parenting styles interact with race-related socialization practices to affect such academic outcomes.

Although it is the synergism of a particular parenting pattern that contributes to an adolescent's performance in school, three components of parenting style have been articulated: (1) supervision and control; (2) autonomy granting; and (3) warmth and acceptance (Baumrind, 1991; Maccoby & Martin, 1983; Steinberg, Elmen, & Mounts, 1989; Steinberg, 1990; Schaefer, 1965). Recent research has specified the components of each parenting pattern and their differential impact on adolescent outcomes. For example, Steinberg and his colleagues have demonstrated that components of authoritative parenting (parental acceptance and warmth, behavioral supervision and control, and psychological democracy) independently contribute to adolescent psychosocial well-being and success in school (Steinberg, Elmen, & Mounts, 1989).

Supervision and Control

Parental controls that are harsh, based primarily on power, and lacking in structure; those that are laissez faire with inadequate monitoring and supervision; and those that vacillate between strictness and laxity are associated with patterns of school maladjustment and academic failure (Hoffman, 1984; Ramsey & Walker, 1988; Wentzel, Feldman, & Weinberger, 1991; Dishion, 1990; Loeber & Dishion, 1984; Lamborn et al., 1991). Monitoring in the context of schoolwork is many faceted, and includes tracking of academic progress (Bempechat, 1990); homework (Clark, 1983); activities; and personal relationships (Loeber & Dishion, 1984). How parents control, discipline, and supervise their children and adolescents has been linked to child and adolescent aggression in school as well as in other settings (Loeber & Dishion, 1984; Patterson, 1976; Patterson, Chamberlain, & Reid, 1982).

Furthermore, one means by which family disruption (parent psychopathology, marital discord, separation) impairs adolescent functioning is through the disruption of parental management behaviors. For example, Weissman and Paykel's (1974) now classic study of depressed women demonstrated how

impaired parental functioning impacted children into adolescence and beyond. These mothers responded to their adolescents with affective and behavioral extremes: they either undercontrolled or overcontrolled their children, and confronted family problems with angry outbursts or withdrawal. The adolescents reciprocated in kind: "Their serious difficulties with authority and deviant behavior included truancy, school dropout, drug abuse, theft, and promiscuity. School problems occurred most frequently and were usually an early sign of the adolescent's problem" (p. 116, emphasis added). In contrast, parental discipline practices based on reason and explanation, which emphasize the relationship between the child's behavior and the feelings of others, have been found to enhance the development of prosocial behavior (Sigel, Dreyer, & McGillicuddy-DeLisi, 1984). Evidence concerning gender, social class, and the impact of parental supervision and control on adolescent behavior indicates that lower-class parents, more than middle- or upper-class parents, tend to discipline their children through the use of power instead of reason and negotiation (Roy, 1950; Bronfenbrenner, 1958; Kohn, 1963; Kohn & Carroll, 1960; Sears, Maccoby, & Levin, 1957; Hoffman, 1984; Janssens & Gerris, 1987; Simons, Whitbeck, Conger, & Chyi-In, 1991). Hoffman speculates that power-assertive techniques may be more efficient for low-income parents who, because of great demands and obstacles and few resources, may not be able to utilize more time-consuming reason-based discipline and control strategies. It should be noted that evidence, albeit not deep, indicates that the positive impact of appropriate supervision and control is stronger for boys than for girls (Steinberg, Elmen, & Mounts, 1989). In sum, parental control techniques that are reflective of authoritative versus either authoritarian or permissive parenting styles and practices are associated with better psychosocial adjustment and school achievement in children and youth.

Autonomy Granting

Another component of parenting style is the amount of autonomy that parents will grant to their adolescent children. A vehicle for facilitation (or inhibition) of autonomy is family decision making. The process by which parents encourage autonomy via decision making has been found to have important implications for school performance. On one end of the spectrum, families who withhold or prevent increased participation in decision making may seriously limit student motivation and learning (Epstein, 1989). At the other end is the danger of families who grant this autonomy too early. Giving early autonomy to youths tends to be associated with lower levels of academic performance, whether measured by effort or by grades (Dornbusch, Ritter, Mont-Reynaud, & Chen, 1990). Not surprisingly, these investigators found that a balanced and gradual involvement of teens in family decisions is optimal: joint decision making between parents and adolescents was linked to higher levels of academic performance.

Similarly, Eccles and Harold (1993) report that the extent of adolescents' involvement in family decision making is associated with school-related outcomes such as self-esteem, intrinsic motivation, and the transition to junior high school. Adolescents who report little opportunity to participate in family decision making showed lower self-esteem, intrinsic motivation, and a more difficult adjustment to junior high school than adolescents who reported increased opportunities to participate in family decisions.

What Dornbusch and his colleagues (1990) describe as "youth alone," "parent alone," and "joint" decision making resembles Baumrind's permissive, authoritarian, and authoritative (respectively) patterns of parental authority. Similarly, Eccles and Harold's (1993) "gradual increase in the opportunity for self-determination and participation in decision making" also resembles the authoritative pattern. Once again, considerable evidence suggests that a component of authoritative parenting (e.g., neither too much nor too little autonomy) is most predictive of adjustment and achievement in adolescents.

Warmth and Acceptance

Parental style also affects the emotional relationship between parents and teens. Indeed one important feature of authoritative parenting is the warm acceptance parents display toward their children. Adolescents may be more receptive to parental influence when they believe their ideas are accepted and taken seriously in a context of warmth and love (Epstein, 1989; Glynn, 1981; Greenberg, Siegel, & Leitch, 1983; Biddle, Bank, & Marlin, 1980). When warmth is communicated, intimacy is enhanced, and the attachment bond strengthened.

The importance of parent-child attachment for healthy adjustment has a rich history in the literature. Bowlby (1969) established the link between attachment and later social competence in young children. More recently, it has been suggested that the concept of attachment may be relevant for adolescents as well as for young children (Greenberg, Siegel, & Leitch, 1983; Hill, 1980; Rice, 1990). The actual mechanisms of parent-adolescent attachment are less understood than those in infancy and childhood. However, there is evidence that family relationships are transformed in adolescence, with the outcome of changes in the parent-teen bond having significant developmental impact (Steinberg, 1990). Two types of changes become salient: (1) parents are perceived by teenagers as moving from figures (who have knowledge or authority) to persons (who have personalities entailing likable and unlikable traits, variable moods, and a range of competencies); and (2) authority in the family shifts from unilateral

parental control to reciprocal cooperation and negotiation based on mutual respect (Youniss & Smollar, 1985). These transformations have been termed "individuation," a process whereby adolescents increase in independence while maintaining connectedness with their parents (Cooper, Grotevant, & Condon, 1983).

Family interactions which permit conflict between members in a context of support; acceptance and active understanding from parents; and continued connectedness are factors which seem to facilitate positive adolescent development in a variety of contexts (Hauser & Bowlds, 1990). More specifically, parent-adolescent closeness seems to mediate school outcomes including general self-esteem and academic self-concept (Cotterell, 1992). In addition, in the face of family disruption such as death, physical separations, and divorce, a warm relationship with at least one parent is sufficient to prevent problems in school functioning (Forehand, Middleton, & Long, 1987). Moreover, intimacy or attachment has been recognized as an important predictor of problem behavior in adolescence (Jessor & Jessor, 1977; Kandel, 1978; Lassey & Carolson, 1980; Wiatrowski, Griswold, & Roberts, 1981). Finally, it should be noted that the positive influence of parental warmth appears to surface with greater strength for girls in the areas of self-esteem and academic outcomes, while for boys, positive outcomes are stronger on measures of ego development (Steinberg, Elmen, & Mounts, 1989; Richards, Gitelson, Peterson, & Hurtig, 1991). Furthermore, the relationship between parenting and adolescent outcomes varies as a function of both adolescent and parent gender (Youniss & Smollar, 1985). Thus the parent-adolescent connection is more accurately characterized as four very different relationships, with the influence of parenting varying by sex of child, sex of parent, and the variable under investigation (Richards et al., 1991; Steinberg, 1987).

A line of research is now evident between Baumrind's contributions over two decades ago and the recent studies on parenting style. What began as an examination of childrearing practices with white, preschool children has been expanded conceptually and methodologically. Parental style has been broken down into component parts, including control strategies and behavior management; parental nurturance and responsiveness; and parental demandingness and autonomy giving. Samples have been extended to older children, ethnically heterogeneous populations, and other sectors displaying diverse demographic variables. Research designs have also been increasing in complexity and variety. The significance of this work cannot be underestimated. The field is beginning to discover important family processes that impact children's cognitive development, academic socialization, and subsequent school performance.

In sum, components of parental style have important implications for adolescent school functioning. Stated in the negative: absence of parental warmth is associated mainly with deficits in the domains of social skills and self-conceptions; absence of psychological autonomy with deficits in

competence and self-reliance; and the absence of demandingness for maturity with deficits in impulse control and social responsibility (Steinberg, 1990). Each of these three domains impacts aspects of adolescent school performance such as social adjustment, self-concept of ability, confidence, motivation, and behavior.

Parental Aspirations

A second means by which families influence adolescents' school performance is in the educational aspirations parents have for their children. Parental aspirations exert great influence upon children's self-concept of ability and subsequent academic performance (Entwisle, Alexander, Pallas, & Cadigan, 1987; Entwisle & Hayduk, 1988). Parents' expectations for achievement (e.g., parents' achievement orientations about the children's schoolwork, parental aspirations for the children's educational or occupational attainment, and pressure for improvement on interaction tasks) (Hess and Holloway, 1984) and parents' expectations of their children's ability levels (Seigner, 1983) seem to have significant impact on children's own self-perceptions and aspirations, motivation, and subsequent achievement. Furthermore, parents' expectations are more directly related to adolescents' self-concepts and expectancies than are the teens' own past records of academic performance (Parsons, Adler, & Kaczala, 1982).

It seems clear, then, that parents' aspirations and expectations influence achievement over and above adolescents' abilities. One vehicle by which parental expectations may influence student motivation is by affecting their children's beliefs about intelligence. These beliefs orient them toward pursuing certain academic goals and shape their coping strategies in the learning environment (Dweck & Leggett, 1988). Research on achievement behavior in middle childhood can be applied to adolescents' reactions to the challenges they encounter in the transition from childhood to adulthood (Henderson & Dweck, 1990). This research relies on attribution theory which suggests that one's explanation for success or failure is influential in determining whether or not one continues to invest energy in valued outcomes (Weiner, 1974). Students who believe their intelligence is fixed tend to pursue the goal of affirming that trait. That is, they seek performance-oriented goals wherein they can demonstrate their abilities successfully and avoid negative evaluations of their abilities. However, they may be more vulnerable to discouragement, anxiety, and debilitation in performance in the face of failure because they see failure as an indictment of their intelligence (Henderson & Dweck, 1990).

In contrast, students who believe that intelligence is malleable, or able to be developed through learning, tend to pursue the goal of increasing their abilities. They remain determined and effective in the face of obstacles because they view them as natural to the learning process. This model of

achievement motivation documents the impact of attributions regarding intelligence on emotional processes (such as performance anxiety), cognitive processes (such as self-concept of ability), and behavioral coping strategies (such as attention, self-talk, and task-orientation) (Henderson & Dweck, 1990).

Children and adolescents do not develop these beliefs about intelligence on their own. Their beliefs are shaped in the environments in which they reside, particularly that of the family. A considerable amount of research evidence is converging to show that parent attributions and beliefs have a causal influence on the children's development of achievement attitudes and behaviors (Bempechat, 1990; Phillips, 1987; Okagaki & Divecha, 1991). Many of these findings emerge from studies on young children. Okagaki and Sternberg (1991) propose that cultural socialization via parental beliefs and behaviors affects intellectual development (e.g., the timing at which particular skills develop; academic achievement; individual differences in intellectual ability; and the development of specific cognitive skills). This is also a fruitful area for future research with adolescents.

Parent Involvement in Education

Finally, another way in which parents influence their adolescent children's school performance is by their direct and indirect involvement in education-related activities. Several studies identify parental involvement as an important variable in high school achievement (Shanahan & Walberg, 1985; Fehrmann, Keith, & Reimers, 1987; Rock & Ekstrom, 1991) and in vocational choices and educational plans (Leung, Wright, & Foster, 1987). In fact, active parental involvement in the schools has been shown to impact school success at all grade levels (Stevenson & Baker, 1987; Eccles & Harold, 1993). One aspect of parental involvement in children's education is the degree of interaction held with the school. According to Bronfenbrenner (1986): "The available research evidence suggests that a powerful factor affecting the capacity of a child to learn in the classroom is the relationship existing between the family and the school" (p. 735). Moreover, parental involvement has been shown to mediate the entire relation between socioeconomic status and achievement (Baker & Stevenson, 1986; Stevenson & Baker, 1987).

Research in the 1950s and '60s began exploring the role of families in preparing young children for academic achievement in the classroom (see e.g., Milner, 1951; Bing, 1963; Freeberg & Payne, 1967; and Hansen, 1969). This gave rise to pressures to involve parents in the activities of the school such as: (1) participation in instruction as aides, volunteers, and tutors; (2) parent education to improve skills and knowledge; (3) supporting the school generally; (4) community-school relations; and (5) policymaking (Hess & Holloway, 1984; Henderson, Marburger, & Ooms, 1986; Moses & Croll, 1987).

Gordon (1979), in his review of research from the 1960s and '70s, argued for parent involvement in education because the behavior of parents and other family members influences child learning. In addition to demographic (i.e., family status) variables, he asserted that family-process variables impact children's academic socialization via both the cognitive and emotional environment of the home. More recently Epstein (1989, 1990) has further detailed Gordon's cognitive and emotional factors of the home into specific structures of educational socialization. These are more precise factors of parental involvement which have great impact on student performance.

Epstein (1989) employed the acronym "TARGET structures" for six aspects of parents' educational socialization which have analogous structures in the classroom. Bempechat (1990) summarizes the model succinctly:

(a) Task structure, or variety of activities, including intellectual activities, that children participate in at home;

(b) Authority structure, or the degree to which children have responsibilities and participate in family decision-making;

(c) Reward structure, or the ways in which parents recognize advances in learning;

(d) Grouping structure, or the ways in which parents influence the child's interactions with family members and peers;

(e) Evaluation structure, or parental standards for and means of judging performance; and

(f) Time structure, or the ways in which parents manage children's time for schoolwork and other activities.

Epstein's model expands "parent involvement" to include many other factors found in the literature as integral to academic achievement. Many of these overlap with aspects of parental style discussed previously. For example, authority structure has obvious similarity to the autonomy granting aspect of parental style. In addition task, grouping, and time structures involve parental monitoring of students' activities, relationships, and time (respectively) are also indicative of the supervision and control practices of parental style. This overlap between parental style and parent involvement in school has been explored in an interesting study by Steinberg and colleagues (1992). These researchers found that adolescents from authoritative homes "do better and are more engaged in school in part because their parents are more involved in schooling" (p. 1275). Moreover, the degree to which parental involvement facilitated school success was mediated by parental style (i.e., nonauthoritative parenting was found to undermine the usual benefits of parental involvement). Thus, the influences of family processes on adolescent school outcomes appear to have a synergistic effect.

Parents' initiation of school contact (Bempechat, 1990) and clarity of academic standards (Clark, 1983) also seem to be important aspects of parental involvement in children's education, as does the means of evaluation and reward for learning-related progress (Epstein, 1989). Parent involvement, then, no longer means such traditional notions as mere attendance at PTA meetings. Rather, it encompasses the whole of parents' practices of educational socialization.

The strength of Epstein's model is that it links crucial family-school processes to learning over a developmental spectrum. It is specific and supported by relevant empirical studies. It recognizes that the degree of overlap in family and school environments helps to explain patterns of student motivation, learning, and development (Epstein, 1989). Therefore TARGET structures are specific factors of the home that affect children's motivation to learn. These are directly analogous to structures at school that organize classroom instruction and management, and are discussed in terms of development (ranging from young children to adolescents) and influence on academic and non-academic outcomes.

The TARGET structures are instructive because they give shape to actual mechanisms in families which influence student performance and the means by which the family-school relationship can enhance that performance. On this latter issue Epstein (1989) holds that the structures are not the sole responsibility of the family but depend

> heavily on the quality and quantity of information from the schools about children's programs and progress. . . . Schools have an important responsibility (based on their understanding of children at specific stages of development and the skills required for success at each grade level) to help families increase the degree of family-school overlap in ways that promote more effective students. (p. 287)

Epstein's model is comprehensive in that it demonstrates links between mechanisms at home and in school. These are extremely valuable linkages for professionals who aspire to work with families and schools to help improve adolescent functioning in both settings. The next section of this review is an examination of the literature on prevention and treatment of adolescent school problems.

Intervention Research

Given the clear connections between family processes and school functioning (Hess & Holloway, 1984; Epstein, 1989; Dornbusch et al., 1987, 1990; Steinberg et al., 1988; Steinberg, Elmen, & Mounts, 1989), one might assume families would be targeted in interventions for children's school difficulties. However, this is often not the case. As previously noted, less than 100 publications from the past decade were located which proposed family-based prevention and/or treatment for school problems, of which only 10 were empirically based investigations. Fewer still were models which were tested with

adolescents. Donovan's (1992) review reflects similar findings. She found just 13 empirically based studies, only five of which were conducted since 1980. While models are growing in number for prevention and treatment of other adolescent difficulties, evaluation data on the effectiveness of family-based programs is scarce for school outcomes (Small, 1990).

As research demonstrates increasing linkages between family processes and school functioning, testing family-based models seems potentially fruitful for intervening with students experiencing school problems. The few treatment studies available offer support for this line of intervention research. The majority of these family interventions have applied social learning principles to family therapy. Included in this review will be three types of family-based interventions: home-based contingency models, parent management training models, and parent involvement models. Finally, we will also include a review of the emerging skills training models which have also been demonstrating promising results with school outcomes (and which are amenable to combining with family-based models to create comprehensive intervention strategies). Since so few studies test models aimed at adolescents, investigations in this review will include a range of age groups from pre-school through high school.

Family-Based Investigations

Home-School Contingency Models

Home-based reinforcement models were an early attempt to apply social learning principles to family interventions. These models involve teacher communication to parents of either general or specific child performance and then parental rewards or sanctions contingent upon these reports. These programs are beneficial because they permit regular feedback to parents and enhance parent-school communication, both of which have been demonstrated as integral to positive student performance in school (Epstein, 1989). The potential efficacy of these models with adolescents seems connected to the adults' ability to make sanctions developmentally appropriate. Also, as with young children, the consistent delivery of reinforcers is crucial, as is effort to move from tangible rewards to intangible ones (i.e., to access the adolescent's internal motivation for school success rather than rely on external incentives). Kelley's (1990) rationale is applicable here:

> Rather than viewing home-school notes as a way of increasing adolescents' dependence on adult-mediated interventions . . . [we] view the procedure as a steppingstone to self-management. Through increased parental monitoring and contingent delivery of privileges, the adolescent student begins to function more competently. Our goal is then to systematically fade out the added adult involvement associated with a school-home program; this is replaced by self-managed academic productivity. (p. 148)

Home-based contingency programs have been found to be effective across a wide range of grades/age groups (Ayllon, Garber, & Pisor, 1975; Schumaker, Hovell, & Sherman, 1977; Trice, Parker, Furrow, & Iwata, 1983); settings (both regular and special education classrooms) (Heaton, Safer, Allen, Spinnato, & Prumo, 1976); and problems (both academic difficulties and disruptive behaviors) (Trice et al., 1983; Blechman, Kotanchik, & Taylor, 1981). However, methodological problems with some of the earlier studies made the positive results reported from home-based reinforcement programs suspect (Atkeson & Forehand, 1979). Subsequently, researchers have ameliorated the methodological flaws of earlier programs and found significant improvement in academic performance of high-risk children utilizing home-based contingency contracting (Blechman et al., 1981).

Parent Management Training Models

A second family-based approach is skills training for parents. In parent management programs, parents are taught and practice specific skills of communication and behavior management with their child. The goals are to create or strengthen a positive and mutually rewarding relationship between the parent and child and to decrease problematic behaviors while increasing prosocial behaviors (McNeil, Eyberg, Eisenstadt, Newcomb, & Funderburk, 1991). Parent training programs have been found to be effective in ameliorating home noncompliance of children ranging in age from 3 to 14 years old (Breiner & Forehand, 1981; Karoly & Rosenthal, 1977); improving severe home and school conduct problems of preschool to early adolescent age children, including noncompliance, temper tantrums, overactivity, physical aggression resulting in serious injury to others (e.g., broken bones, stab wounds); chronic firesetting; cruelty toward and killing of animals; chronic stealing outside of the home; and neighborhood vandalism (McNeil, et al., 1991; Patterson, 1974; Patterson, Chamberlain, & Reid, 1982; Wiltz & Patterson, 1974). Moreover, parent training has documented gains in bringing problematic behaviors of treated children within normative levels of nonreferred peers who are functioning adequately, and in maintaining these gains over time (Kazdin, 1985).

Parent training models, though not always aimed at treating school problems per se, may impact school achievement or adjustment by increasing authoritative parenting (Small, 1990). As documented in the family process literature, the parental competencies indicative of authoritative parenting have been linked to adolescent school performance (Dornbusch, et al., 1987; Steinberg, Elmen, & Mounts, 1989). Thus to the extent that a parent training program increases parents' skills in establishing appropriate behavioral limits and granting psychological autonomy to adolescents in a context of warmth and democracy, school performance may be affected.

Many of the parent training models have similar components, including some form of behavioral assessment, instruction in basic principles of child management, development of a generalization plan, and evaluation of the progress by the family (Horne & Walker, 1984). Intervention strategies typically focus on parents' self-control; discipline and reinforcement practices; and communication with their children. As with home-contingency programs, success of these programs with adolescents lies in the adults' abilities to implement fair and developmentally appropriate sanctions and communication that enhances family closeness and problem-solving abilities.

Parent Involvement Models

A final method of family intervention is parental involvement in children's educational activities. Parental involvement programs emphasize the importance of parents' support for the remediation of academic, motivational, and behavioral difficulties. Parents are taught methods of influencing their children's academic goals, educational achievement, and self-concept of ability. Programs vary from more cursory involvement such as increased parental attention to their child's schoolwork (Rodick & Henggeler, 1980) to parental teaching interventions (Tizard, Schofield, & Hewison, 1982) to intervention into more complex family processes such as Epstein's (1989) TARGET structures. Increasingly, parent involvement efforts are focusing on the latter:

> In contrast to the politically based, formalized parent participation models of the preceding era (1965-1980), which failed to elicit widespread or long-term parent involvement, today's strategies stress parents as extensions of the schools' business--supporters of homework, monitors of activities, and reinforcers of school values. (Heath & McLaughlin, 1987, p. 577)

This movement may be due to the recent challenge raised against the alleged benefits of early intervention programs for handicapped, disadvantaged, and at-risk students. White, Taylor, and Moss (1992) argue that there is insufficient data to support involving parents in such programs. Thus, for the purpose of this review, parent involvement interventions will refer to programs designed to: (1) enhance parent-school partnerships; and (2) target parenting practices that support school activities, values, and skills (including, parental teaching behaviors and child rearing skills).

Interventions that involve parents in their children's education thus defined have proven effective in: (a) improvement in reading of elementary-age students from urban schools at two-year follow-up (Tizard, et al., 1982); (b) amelioration of academic and motivational reading problems of low-achieving, inner-city junior-high school students (Rodick and Henggeler, 1980); (c) readmission of dropout students to high school (Svec, 1986); and (d) enhancement of parent-school relations in general (Epstein, 1986,

1987). These programs have also increased students' motivation to learn at home as evidenced by commitment to study, completion of homework, discussion of school experiences within the family, and persistence towards school graduation (Epstein, 1989).

To summarize, despite considerable evidence indicating the importance of families to adolescent school performance, few family-based interventions have been evaluated empirically. Though more studies have been conducted with young children, most of these parent programs are not rigorously controlled (White, Taylor, & Moss, 1992). Methodological problems such as failure to use random assignment, lack of control groups, and homogeneous samples raise questions of generalizability, sampling biases, and general validity of results.

> In part, this lack of rigorous evaluation is due to the fact that programs are not scientific laboratories in which parents are randomly assigned to groups, where multiple-criteria outcome measures which evaluate proximal and distal program effects are used, and where the situation allows for internally valid research designs. (Iglesias, 1993, p. 17)

For adolescents, the majority of family models are described in clinical papers that cite case material as illustration of the intervention's efficacy (see e.g., Aponte, 1976; Eno, 1985; Goldstein, 1986). Moreover, many of the clinical articles do not identify the specific population and/or particular school problem targeted for intervention. Instead, the models are generic, without reference to demographic context such as age, ethnicity, urban/suburban/rural status, or socioeconomic status of the target population (Conoley, 1987; DiCocco & Lott, 1982; L'Abate, Baggett, & Anderson, 1984; Lusterman, 1985, 1988; Guerin & Katz, 1984). In addition, these models typically do not identify the specific problems they target, or they propose treatment for an array of school problems (Carlson, 1987; Fish & Jain, 1988; Green, 1985; McGuire, Manghi, & Tolan, 1990; Power & Bartholomew, 1985, 1987). Unfortunately these models are impossible to evaluate without outcome data.

The trend in treatment research away from grand scale theories to population- and problem-specific models of intervention is more conducive to identifying effective models for preventing and treating adolescent school problems. The proliferation of empirically based skills training models of intervention for particular adolescent problems is an example of this trend. These models are a promising development in a literature which has applicability to family-based interventions for adolescent problem behaviors.

Skills-Based Investigations

Skills-based models often target at-risk students themselves (i.e., without family members) for preventive purposes. Skill training programs typically emphasize the development of general skills and

competencies (e.g., stress management, communication skills) as well as skills that are specific to particular problem behaviors (e.g., resistance skills against peer pressures to use drugs, or self-management skills to improve poor study habits). Psychosocial skills training models have proven effective in: (a) preventing adolescent substance abuse (Botvin, Baker, Dusenbury, Tortu, & Botvin, 1990; Tobler, 1986); (b) improving adolescent interpersonal competence (Botvin & Tortu, 1988; Schinke, 1981); (c) enhancing adolescent coping and stress management skills (Feindler, Marriott, & Iwata, 1984; Schinke, Schilling, & Snow, 1987); and (d) improving adolescent problem-solving (Kachman & Mazer, 1990; Larson, 1989).

Research also supports the efficacy of psychoeducational skills-based approaches for specific school outcomes. Intensive skills training with individual adolescents and groups of adolescents has been shown to have significant impact on school performance. Intervention studies targeting social skills (Hammond, 1990); study skills (Champlin & Karoly, 1975; Greiner & Karoly, 1976; Richards, McReynolds, Holt, & Sexton, 1976; Ollendick, Matson, Esveldt-Dawson, & Shapiro, 1980); moral reasoning (Arbuthnot & Gordon, 1986); and self-management skills (Schinke et al., 1987; Dean, Malott, & Fulton, 1983) all document gains in school adjustment and/or achievement. Similarly, the effectiveness of peer-influenced academic interventions such as peer tutoring and cooperative learning has been established (Cohen, Kulik, & Kulik, 1982; Johnson, Maruyama, Johnson, Nelson, & Skon, 1981), particularly with special education (Ballard, Corman, Gottlieb, & Kaufman, 1977; Cooper, Johnson, Johnson, & Wilderson, 1980; Maher, 1982) and ethnic minority students (Slavin, 1980).

In sum, skills training models have demonstrated effectiveness with academic, behavioral, and interpersonal outcomes which impact students' school performance and adjustment. Skills-based models expand conceptions of educational outcomes beyond academic achievement which

> . . . alone does not guarantee the effective citizens and adults America requires. Other outcomes must be accomplished concurrently in order for academic achievement to mean much. These nonacademic outcomes build on notions of social competence and include additional dimensions, such as physical and mental health, formal cognition, and motivational and emotional status. (Heath & McLaughlin, 1987, p. 578)

Thus in addition to academically oriented interventions demonstrated in educational research, skills models broaden the definition of school performance to include interpersonal competence, effective coping, and resistance to drug abuse. Moreover, while family-based interventions have historically been aimed at younger students, skills training models have demonstrated positive results with both children and adolescents. And, they have shown particular promise with adolescent populations at risk for school failure and dropout (e.g., low-income urban or drug abusing adolescents).

DISCUSSION

Co-Occurrence of School Difficulties With Other Adolescent Problems

School problems have a well-established potential to guide assessment and treatment planning for those working with adolescents. School failure is one of the most clearly established risk factors for substance abuse as well as for other problem behaviors in adolescence, such as delinquency and teen pregnancy (Hawkins & Lam, 1987; Elliot, Huizinga, & Menard, 1989; Dryfoos, 1990). Some empirical support has been found for considering these problems not as discrete, disconnected problem behaviors, but as a syndrome of problem behaviors--hypothesized to have the same organizing etiology (Jessor & Jessor, 1977). Because of the covariation of problem behaviors (Kazdin, 1987), skill-based approaches proven effective in preventing and ameliorating drug abuse and other adolescent behavior problems may also be effective with school-related problems. Hawkins, Lishner, Jenson, & Catalano (1987) propose that the co-occurrence of many adolescent problems suggests not only common etiological factors but also similar targets of intervention. Future intervention model construction and testing will determine if this general idea holds and the degree and nature of the modifications necessary to tailor previously tested interventions to specific school-related problems.

Co-Occurrence of School Difficulties With Clinical Disorders

Issues of comorbidity raised in the literature on developmental psychopathology are also instructive. Not only do adolescent-academic and school-adjustment difficulties frequently co-occur with other "problem behaviors," but they also co-occur with clinical disorders. Prevalence studies indicate that poor school performance is one of the major correlates of psychiatric disorders in adolescents (Offord, Boyle, & Racine, 1990). Deficits in academic achievement are common in adolescents who were diagnosed with attention deficit-hyperactivity disorders (ADHD) as children (Paternite & Loney, 1980). In fact, it has been estimated that up to 30% of the ADHD population will fail to complete high school (Weiss, Hechtman, Milroy, & Perlman, 1985). Academic and behavioral problems in school are also frequent among youth diagnosed with conduct disorder (school truancy is one of the diagnostic criteria for the disorder). Conduct-disordered youth often manifest symptoms of attention deficit disorder (Stewart, Cummings, Singer, & DuBlois, 1981) as well as other disorders such as depression (Puig-Antich, 1982) and learning disabilities (Lewis, Lewis, Unger, & Goldman, 1984). Conduct disorder and substance abuse are thought to have common etiological roots (Haggerty, Wells, Jenson, Catalano, & Hawkins, 1989). In addition, the link between substance abuse and depression is frequently interpreted as adolescents' efforts to self-medicate to reduce depressive symptoms (Simons, Conger, & Whitbeck,

1988). Each of these disorders is likely to manifest symptoms in the school setting. Again, because of their co-occurrence, efforts aimed at treating one disorder (such as skills-training programs) may also impact symptoms of co-morbid clinical disorders.

Intervention Packages

This overlap of adolescent problems and disorders has led some to propose "risk-focused" intervention efforts (Hawkins, Catalano, & Miller, 1992). These are multi-component strategies that: (1) target youth at greatest risk (i.e., those exposed to multiple risk factors); (2) focus on eliminating or moderating the risk factors; and (3) seek to enhance protective or buffering factors of adolescent problem behaviors (Hawkins et al., 1992). Comprehensive treatment packages are now recommended in skills-based prevention research as well (Tobler, 1986). Efficacy is thought to be enhanced when skills training is included with other modalities of intervention--especially modalities that include parents (Glynn & Haenlein, 1988; Falck & Craig, 1988; Coombs, Paulson, & Palley, 1988; Hawkins, et al., 1987).

Family-based studies specifically aimed at treatment of school difficulties also affirm the need for combinations of treatment interventions (McNeil, et al., 1991; Rodick & Henggeler, 1980; Bry, Conboy, & Bisgay, 1986). For example, though the McNeil, et al. (1991) study focused on young children, school problems targeted were severe, similar to those conduct problems evidenced in adolescent students. In this study parent training resulted in school generalization primarily in the area of conduct problems/oppositional behavior (e.g., disobeying teacher commands, sassing, teasing, hitting, talking out of turn, whining, yelling, and breaking school rules). Generalization was not found in the areas of hyperactivity, inattention, and peer relationships. Regarding the latter, the authors suggest that "an additional social skills treatment component would be beneficial to the overall school adjustment of these children" (p. 148).

In a study targeting at-risk, urban adolescents (Rodick & Henggeler, 1980), two treatments were offered: (1) a tutoring/ mentoring program; and (2) a parent involvement program. Both interventions achieved significant positive results in the students' academic performance. The investigators speculate that the gains may be increased if: (a) the treatment sessions were dispersed over a longer period; (b) booster sessions were included; and (c) the reinforcers were phased out gradually. Most important to the present discussion, they make recommendations similar to those in the McNeil, et al., (1991) study, namely, combining the tutor and home approaches for a comprehensive treatment package.

Given our current knowledge base, programs which intervene in multiple domains (i.e., individual, family, school, community) and address multiple targets (including the problem behavior itself

and the precursors or correlates which heighten the risk) offer state-of-the-art treatment for at-risk youth. Some contemporary family-based intervention approaches follow this strategy (e.g., Henggeler & Borduin, 1990; Liddle, Dakof, & Diamond, 1991). Hawkins et al. (1992) present an extensive review of research on risk and protective factors of adolescent drug abuse which characterizes the state of the current knowledge base:

> Most studies to date have focused on small subsets of identifiable risk factors for drug abuse. There is little evidence available regarding the relative importance and interactions of various risk factors in the etiology of drug abuse, although current studies are seeking to measure a broader range of identified risk factors. At this time, it is difficult to ascertain, for instance, which risk factors or combinations of risk factors are most virulent, which are modifiable, and which are specific to drug abuse rather than generic contributors to adolescent problem behaviors. Current knowledge about the risk factors for drug abuse does not provide a formula for prevention, but it does point to potential targets for preventive intervention. (p. 65)

This also appears to be the case for adolescent school problems. The research offers no specific formulas for intervention, but risk factors are empirically derived which can be targeted.

A handful of such integrative models exists for the treatment of adolescent school difficulties. Bry et al. (1986) in a small intervention study targeted drug abusing adolescents who were failing in school. Combining behavioral techniques with family therapy interventions, this study yielded positive results (decreased drug use and improved grades) which were maintained at 1-1/4-year follow-up. Other investigations have also targeted drug-abusing adolescents including school performance variables as outcome measures. One study utilized a retrospective method to examine the impact of a community-based family intervention on students' school performance (Kirk, Chapman, & Sadler, 1990). Although random assignment to treatment conditions was not used, promising results were attained. Treated students received higher academic and citizenship grades than untreated controls and had fewer school absences.

Such encouraging results in the academic realm regarding drug abusing populations have not always existed. Tosti-Vasey and Barton (1991) conducted a large multi-component drug and alcohol program which included skills training, family communication intervention, and alternative activities to drug/alcohol use. The program was successful in reducing school disciplinary problems of the adolescents but not in improving their grade point averages. In contrast, excellent results (including academic outcomes) were found with another population at risk for school dropout: the Nicholls State-Youth Opportunities Unlimited (NS-YOU) program offered several kinds of interventions to adolescents from low-income families. This comprehensive model provided academic remediation, counseling, and job training in a 7-week intervention. Treated subjects showed increased performance in reading and

math, decreased external locus of control, and smaller decreases in self-esteem as compared to untreated subjects (Curry, 1990). Treatment gains were maintained at 6-month follow-up. Though few in number, the testing of comprehensive models (in terms of types of interventions and problems targeted) such as these offers hope to adolescents at risk for school failure and other problem behaviors.

Empirically Derived and Theoretically Driven Intervention Models

Failure to anchor programs in a theoretical base and inadequate evaluation have been linked to ineffective outcomes with substance abusing and delinquent youth (Stein, Garrett, & Christiansen, 1990). This is likely to be the case with adolescents experiencing school difficulties as well. There is a need for intervention research with adolescents (particularly ethnic minorities) that targets family processes demonstrated to be integral in impacting school performance. Moreover, school performance should be broadly defined to include domains of development and behavior demonstrated to be linked with school problems and performance. These would include: cognitive development, academic achievement, and intractable behavior problems, including drug use, truancy, chronic failure, and aggression (i.e., behaviors that place adolescents at risk). The future theoretical structures will be integrative and will draw upon various fields and specialties. The intervention models emanating from these theoretical structures will also be integrative. The challenges of constructing complex but coherent multi-component theoretical and interventions models are formidable, yet the field seems poised on the crest of this new wave.

Conceptualization of School Problems

Contemporary thinking and research argues for multidimensional explanations of adolescent school difficulties. School failure is a process, not a single risk event (Dryfoos, 1990). Its etiology is multivariate, and it can be manifested in various forms. Evidence of school failure (or risk thereof) includes disciplinary problems; absenteeism and truancy; low test scores and grades; being behind modal grade (older than the average age of one's classmates); rejection by peers; low involvement in school activities; and of course, dropping out entirely (Dryfoos, 1990). School failure involves a range of difficulties that are academic, behavioral, emotional, and interactional in nature.

A multicausal, interactive framework which considers intrapersonal, interpersonal, and sociocultural correlates is needed to adequately conceptualize the complex network of variables associated with adolescent problem behaviors. As with adolescent drug abuse, the individual type or specific

combination of risk factors which determine adolescent school difficulties is not clearly identifiable. Similarly, we do not yet know which particular protective factors, or combination of factors are most effective in buffering the adolescent from the risk-factor influences. Despite, these gaps in our knowledge base, we do know a great deal about family influences on the school performance of adolescents, theoretical structures which can be used to develop coherent conceptual frameworks, and empirically derived intervention strategies which can be tailored to target particular academic and school-related problems.

It is likely that the theoretical models of tomorrow will utilize intrapersonal, interpersonal, and ecological variables which can heighten or buffer the risk for school problems. Further, interventions which are comprehensive in scope, targeting not only school failure directly, but also the concomitant risk behaviors and, as we learn about them, their etiological roots, offer the most promise in effecting a solution.

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Educational Resilience in Inner Cities

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The research reported herein is supported in part by the Office of Educational Research and Improvement (OERI) of the U.S. Department of Education through a grant to the National Center on Education in the Inner Cities (CEIC) at the Temple University Center for Research in Human Development and Education (CRHDE). The opinions expressed do not necessarily reflect the position of the supporting agencies, and no official endorsement should be inferred.

INTRODUCTION

As the decade of the 1990s unfolds, the nation's attention has been captured by the plight of children and families in a variety of risk circumstances, and by the urgency for interventions that foster resilience and life chances of all children and youth. Problems of great severity exist for many children, youth, and families, particularly those in at-risk circumstances, such as the inner-city communities. The quality of life available to children and families in these communities is threatened by a perilous set of modern morbidities that often involve poverty, lack of employment opportunities, disorderly and stressful environments, poor health care, children born by children, and highly fragmented patterns of service. In responding to such challenges, researchers are focusing on factors that strengthen the resources and protective mechanisms for fostering healthy development and learning success of children and youth.

This chapter has two purposes. The first is to provide a synthesis of findings from three disparate research bases that conceptually are closely linked: (a) the psychological characteristics of resilient school-aged children; (b) characteristics of effective schools, instructional methods, and teacher behaviors that foster learning success among students considered "at risk"; and (c) features that contribute to collaborative interventions integrating family and community resources that effectively serve the developmental and learning needs of children and youth. The second is to discuss their implications for fostering educational resilience of children in at-risk circumstances.

The concept of resilience is discussed as a productive construct that relates psychological characteristics of children at risk to features of schools, families, and communities that foster resilience and schooling success. In the context of this paper, educational resilience is defined as the heightened likelihood of success in school and in other life accomplishments, despite environmental adversities, brought about by early traits, conditions, and experiences. Furthermore, since a particular interest of educational theorists and practitioners is in alterable variables that are important to learning and improvements in educational practice, the focus of discussion in this chapter is on potentially malleable conditions within communities, homes, student peer groups, schools, and classrooms.

Resilience: A Productive Construct

Since the 1970s, developmental psychopathology (Cicchetti, 1990) has grown rapidly as a scientific discipline. It has provided an integrative framework for understanding maladaptation in children and adolescents. Topics of concern have included the roles of risk, competence, vulnerability, and protective factors. Each of these topics has been related to the onset and course of development of psychopathology.

Many of the contributions to the field of developmental psychopathology have been made by distinguished researchers in clinical psychology, psychiatry, and child development. These researchers provided early information documenting the phenomenon of psychosocial resilience in diverse, at-risk populations (Rolf, Masten, Cicchetti, Nuechterlein, & Weintraub, 1990). Among the at-risk populations studied are children with family histories of mental illness (Goldstein, 1990); of divorced parents (Wallerstein, 1983; Watt, Moorehead-Slaughter, Japzon, & Keller, 1990); exposed to high levels of maternal stress (Pianta, Egeland, & Sroufe, 1990); addicted to drugs (Newcomb & Bentler, 1990); born at medical risk (O'Dougherty & Wright, 1990); exposed to family violence (Straus, 1983); exposed to early parental death (Brown, Harris, & Bifulco, 1986); and in poverty (Garmezy, 1991).

These studies and many others led to a new developmental model of psychopathology that addresses both vulnerability and resistance to disorders and spanned the years from infancy through adulthood. The findings demonstrate that some children escape adversity without lasting damage. They provide a rich theoretical and empirical basis for new programs of educational research that can identify ways to foster and sustain the learning success of many at-risk students.

The contribution of studies of atypical, pathological, or psychopathological populations is clear. Using results from the study of children who are at risk but able to "beat the odds," however, allows researchers to expand upon the developmental principles on which the theories of developmental psychopathology are based. Studies of at-risk populations, including those who "beat the odds," identify the many pathways that lead from childhood to adulthood. These studies identify which factors are most important to healthy development, for example, physical, socioemotional, cognitive, and environmental.

A New "Vocabulary of Risk"

As developmental psychopathology established itself as a new discipline, a "vocabulary of risk" emerged. Constructs such as vulnerability, protective factors, adaptations, and competence have provided the conceptual tools for ground-breaking work; they clarified and furthered our understanding of factors that enable individuals to successfully overcome adversities and challenges in development and learning. Within this exciting new field of study, the construct of "resilience" emerged.

Rutter (1990) defined "resilience" as the "positive pole of the ubiquitous phenomenon of individual differences in people's response to stress and adversity" (p. 181). Masten, Best, and Garmezy (1990) refer to the resilience phenomenon as the "capacity for or outcome of successful adaptation despite challenging or threatening circumstances" (p. 425). They further note that resilience concerns "behavioral adaptation usually defined as internal states of well-being or effective functioning in the environment or

both. Protective factors moderate the effects of individual vulnerability or environmental hazards so that the adaptational trajectory is more positive than would be the case if the protective factor were not operational" (p. 426).

The field of prevention, where researchers and practitioners work to eliminate or at least delay the onset of problems such as alcohol and drug abuse, teenage pregnancy, delinquency, and school dropout, also employs this new vocabulary. These researchers and practitioners identify and describe "protective factors" and methods for building resilience in children and youth.

The Critical Role of Activity in Resilience

Why has the construct of resilience received so much attention over the past decade? The answer to this question is found in prospective studies that focus on individuals believed to be at high risk for developing particular difficulties: children exposed to neonatal stress, poverty, neglect, family violence, war, physical handicaps, and parental mental illness. These studies provide rich data bases from longitudinal studies that span several decades of new research aimed at identifying the processes underlying adaptation, successful trajectories, and pathways from childhood to adulthood.

As researchers gained insight into the risk factors that promoted the onset of a disorder, a puzzling but consistent phenomenon began to surface. Although a certain percentage of children in high-risk circumstances developed psychopathologies, a larger percentage did not develop disorders and became healthy and competent adults (Garmezy, 1991; Rutter, 1966, 1987; Watt et al., 1984). The often-reported statistic that only one out of four children born to alcoholic parents will become alcoholic (Benard, 1991) is a case in point.

The active role of the individual has been identified as an important factor in surviving stressful circumstances (Rutter, 1990). Individuals' responses to stressful circumstances vary, and what they do is the critical factor in whether they emerge successfully. Passivity in the face of adversity rarely provides the necessary information for an individual to develop strategies that can be useful in stressful conditions. The activity of resilient individuals serves as a self-righting mechanism that provides feedback that can be used to identify productive strategies in order to emerge unscathed from adversity.

Characteristics of Resilient Children

Resilient children, described by Garmezy (1974) as working and playing well and holding high expectations, have often been characterized using constructs such as locus of control, self-esteem, self-efficacy, and autonomy. A profile of resilient children that has emerged from the work of the Western

Regional Center for Drug-Free Schools and Communities (Benard, 1991) includes such descriptors as strong interpersonal skills, a capacity to be responsive to others, a high level of activity, and flexibility. Resilient children were observed to perceive experiences constructively; they maintain healthy expectations, set goals, and have a clear sense of purpose about their future agency in controlling their own fate.

One construct that has shed some light on childhood resilience is "learned helplessness" (Seligman, 1975). Resilient children, as described in the research literature, rarely exhibit the passive behaviors associated with learned helplessness. Benard (1991) has concluded that resilient children's high expectations, belief that life has meaning, goal direction, personal agency, and interpersonal problem-solving skills coalesce into a particularly potent set of personal attributes. These attributes reduce the propensity of resilient children to exhibit the debilitating behaviors associated with learned helplessness. Seligman (1991) has recently published a new book entitled Learned Optimism that reviews research on the value of positive belief systems for life success. Although he does not address resilience directly, the behaviors and beliefs he describes are in concert with empirical findings on the psychosocial characteristics of children who overcame life adversities (i.e., resilient children).

A second line of research that sheds light on the psychosocial processes that promote resilience considers the coping mechanisms that individuals employ during stressful life events. Chess (1989) identified "adaptive distancing" as the psychological process whereby an individual can stand apart from distressed family members and friends in order to accomplish constructive goals and advance their psychological and social development. Adaptive distancing may be only one of a family of coping mechanisms that individuals employ as they successfully adapt to stressful events. Future research on resilience may provide empirical evidence of the types of coping mechanisms that resilient individuals employ.

Rutter (1990) and Chess and Thomas (1990) identified some of the adverse temperamental behaviors that children exhibit which can irritate caregivers and make the children targets of hostility. These behaviors include low regularity in eating and sleeping behaviors, low malleability, negative mood, and low fastidiousness. These attributes reduce a child's likelihood of receiving positive attention from adults. Even temperament, malleability, predictable behavior, mild-to-moderate emotional reactions, approaching rather than withdrawing from novel situations, and a sense of humor are attributes that protect children and produce affection and support from adults. Children in stressful life circumstances who have an easy temperament are more likely to receive the social support necessary for surviving adverse life events. Being female and in good health are two attributes that have also been associated

with resilient children (Benard, 1991). Overall, social competence, good problem-solving skills, independence, and a clear sense of purpose are the critical attributes of resilient children (Masten et al., 1990).

These attributes of social competence, good problem-solving skills and communication, independence, and sense of purpose were also noted in the findings from a study of high-achieving students from economically disadvantaged homes in urban schools. Using the National Education Longitudinal Study (NELS) data base (U.S. Department of Education, 1988), Peng, Lee, Wang, and Walberg (1991) conducted a study to identify unique characteristics and experiences of urban students of low socioeconomic status (SES) whose combined reading and mathematics test scores were in the highest quartile on a national norm, i.e., resilient students. They found that 9.2% of low SES urban students were in this category. These students had self-concepts and educational aspirations and felt more internally controlled than nonresilient students. They also interacted more often with their parents and were more likely to attend schools where learning is emphasized and students are encouraged to do their best.

Characteristics of Schools that Foster Student Resilience

Effective schools are powerful environments. Students can acquire resilience in educational environments that foster development and competence in achieving learning success. Effective educational practices have constituted a major research front since the mid-1970s (Cruickshank, 1990). School effectiveness has both macro-level and micro-level dimensions. The macro-level factors encompass the total school environment and related extraschool variables. Micro-level factors emphasize the effectiveness of classroom instruction, including replicable patterns of teacher behaviors and student achievement. Both school- and class-level effectiveness have been heavily researched.

Many definitions of effective urban schools have emerged from the extant research bases. The Carnegie Foundation for the Advancement of Teaching (1988) has advanced a definition of an effective urban school based on 15 criteria. These criteria, expressed as questions, are listed below:

- Does the school have clearly defined goals?
- Does the school evaluate the language proficiency of each student? What evidence is there that students are developing their communication skills, both oral and written?
- What are the number and types of books being read by students?
- Does the school have a core curriculum for all students? What is the general knowledge of students in such fields as history, geography, science, mathematics, literature, and the arts? Is such knowledge appropriately assessed?

- What is the enrollment pattern among the various educational programs at the school? Specifically, what is the distribution between remedial and academic courses?
- Is the school organized into small units to overcome anonymity among students and provide a close relationship between each student and a mentor?
- Are there flexible scheduling arrangements at the school?
- Is there a program that encourages students to take responsibility for helping each other learn and helps make the school a friendly and orderly place? How well is it succeeding?
- What teaching innovations have been introduced during the preceding academic year? Are there programs to reward teachers who exercise leadership?
- Does the school have a well-developed plan of renewal for teachers and administrators?
- Is the school clean, attractive, and well-equipped? Does it have adequate learning resources such as computers and a basic library? Can the school document that these resources are used by students and teachers to support effective learning?
- Are parents active in the school and kept informed about the progress of their children? Are there parent consultation sessions? How many parents participate in such programs?
- Does the school have connections with community institutions and outside agencies to enrich the learning possibilities of students?
- What are daily attendance and graduation rates at the school?
- What changes have occurred in the dropout rate, in students seeking postsecondary education, and in students getting jobs after graduation? What is being done to improve performance in these areas?

The program features included in these criteria on effective urban schools are plausible. Indeed, it might be difficult to defend the idea that they are desirable only for urban schools. They appear, in fact, to correspond well with an extensive content analysis of approximately 200 research reviews of effective educational policies and practices that apply to schools in general (Wang, Haertel, & Walberg, 1990). One of the challenges for research on urban schools, and indeed schools in general, is to identify ineffective policies and practices. From the point of view of scientific parsimony and educational efficacy, such research might frugally hypothesize that effective policies transcend location, ethnic group, social class, subject matter, grade level, etc. The burden of proof might then be placed on showing convincing differential policies, i.e., those that work consistently well in some settings but consistently poorly in others.

Among the most perplexing questions in designing innovative, research-based intervention programs for improving students' learning outcomes has been the relative importance of the multiplicity of distinct and interactive influences on student learning. Findings from a recently completed synthesis on variables important to learning document the multidimensional nature of school effectiveness (Wang,

Haertel, & Walberg, in press). Results indicate that the proximal variables, such as student cognitive and metacognitive processes, classroom management techniques, teacher-student interactions, and the home environment, had a stronger and more pervasive impact on school learning than distal variables, such as school and district policies, demographic characteristics, and state policies and programs.

Studies of effective teaching provide a rich source of data on the micro-level variables that contribute to school effectiveness. During the past 10 years, a number of research syntheses were published that identified effective instructional practices (Reynolds, 1982; Slavin & Madden, 1989; U.S. Department of Education, 1986; van de Grift, 1990; Wang, Haertel, & Walberg, 1990; Williams, Richmond, & Mason, 1986). The consistent characteristics that have emerged include degree of curriculum articulation and organization; maximized learning time; high expectations for student achievement; opportunity to respond; degree of classroom engagement; and student participation in setting goals, making learning decisions, and engaging in cooperative learning.

Many characteristics of effective schools emphasize the importance of a sense of student "involvement" and "belonging" that reduces feelings of alienation and disengagement. The more ways that a student feels attached to teachers, classmates, the school, and the instructional program, the more likely that participation in school functions as a protective shield against adverse circumstances. Student engagement and participation in school and classroom life promote self-esteem, autonomy, positive social interactions, and mastery of tasks. These positive outcomes have been shown to enhance life satisfaction and general well-being among urban teenagers (Maton, 1990).

Only a few studies have provided direct evidence on whether a particular set of school characteristics is effective in fostering resilience among students in inner-city schools. Many of the earlier studies conducted on effective schools found high levels of multicollinearity between desirable school characteristics and the SES characteristics of the communities being served (Stringfield & Teddlie, 1991). Characteristics of more effective schools were often associated with schools serving students from well-to-do neighborhoods. Some interesting alterable variables, however, have emerged from recent studies of the effects of urban schools.

In Phase III of the Louisiana School Effectiveness Study, for example, 16 schools of varying SES levels were studied (Teddlie, Kirby, & Stringfield, 1989). These schools were classified as positive and negative outliers. Positive outlier schools were those that scored above their predicted achievement levels, while the negative outlier schools performed below their predicted achievement levels. The study documented variance in school, principal, and teacher activities within all SES levels. Greater achievement was obtained at schools that devoted a high percentage of time to tasks that made educational

sense. The atmosphere was friendly in the schools that were performing at higher than expected levels of achievement, but principals and teachers protected the time spent on academic tasks and ensured that students' academic programs were well coordinated. Principals were very engaged in school events, remained active in the selection and retention of their faculties, valued high academic achievement, and supported the library in the life of the school. Teachers who achieved higher levels of academic attainment employed teaching methods that involved planning, clearly specified management and disciplinary rules, active teaching of higher order thinking skills, and providing direct instruction when appropriate. In successful schools, they also held high academic expectations.

Maughan (1988) used a multilevel, fixed-effects research design in a three-year study of school experience and psychosocial risk in 50 multiethnic junior high schools. The findings demonstrate that schools that were successful with socially and economically disadvantaged students enjoyed strong leadership, faculty input on decision making, esprit de corps among staff, and strong parental involvement. Effective schools were described as having physically and emotionally pleasant surroundings. Classrooms were well-managed, and instruction was stimulating. Children had a strong voice in choosing the kinds of instructional activities and classes in which they participated. These successful schools functioned effectively for both boys and girls, as well as across ethnic groups and social classes.

These findings were also noted in a study by Peng, Weishew, and Wang (1991). Using the NELS data base (U.S. Department of Education, 1988), they identified inner-city schools that had high achievement scores despite their disadvantaged circumstances, i.e., resilient schools that "beat the odds." The resilient schools in their study were found to be more orderly and structured than the low-achieving inner-city schools. Parents of students from the resilient schools held higher educational expectations for their children.

There is an optimism among educational researchers and practitioners about the possibility of implementing what is known from research and practical wisdom. When effectively implemented, effective strategies can shield children from the adversity that abounds in inner-city environments. In his compelling book entitled Fifteen Thousand Hours, psychiatrist Michael Rutter (1979a) argued that a school ethos of high expectations protects students against the debilitating effects of adversity. He found an important relationship between a school's characteristics and children's behavior problems. Problem behaviors decreased in schools designated as successful, and increased in unsuccessful schools. Variations in the rates of disruptive behavior were related to the ethos of the schools themselves. Thus,

children living under conditions that are not supportive of psychosocial well-being may experience their school as a force for good or bad depending on the ethos of the school itself.

The review of research prepared by Benard (1991) also stressed the role that high expectations play in the development of resilience. Based on results of six major research studies, Benard reports that schools ". . . that establish high expectations for all kids--and give them the support necessary to achieve them--have incredibly high rates of academic success" (p. 11).

How a school remains effective is a question that has not received much attention. One of the disappointments of the school effectiveness movement has been the inability to maintain improved performance from year to year (Freiberg, 1989). Good and Brophy (1986) express this concern in reviewing the school effectiveness literature: " . . . the study of stability presents major technical and conceptual problems to those who study schools as organizational instructional units" (p. 587). Freiberg (1989) cites the work of Dworkin (1987) and Murnane (1975), who caution that variables associated with effective schools may differ in urban settings because student populations are very mobile--sometimes expanding, other times shrinking, but always changing. The positive effects of successful schools are amplified over time.

Research efforts to determine how schools become effective and how they maintain their effectiveness require recognition of the multidimensional nature of school effectiveness. Research on school effects, teaching practices, community and family influences, and student and teacher characteristics must be examined in order to understand how inner-city schools can support high performance and resilience in their students. The intimate and informed relations among students, their peers and families, and educators in private (especially parochial) schools, smaller schools, and schools of choice, may explain their appeal and apparent achievement advantages (Boyd & Walberg, 1990; Coleman & Hoffer, 1987; Fowler & Walberg, 1991).

Characteristics of Communities that Foster Resilience

Designing successful educational programs also requires examining the institutions that effectively provide for the education, health, and human services needs of local communities. The role of these institutions needs to be studied to determine if they prevent or facilitate the cycle of "at-risk-ness" that adversely affects development and learning.

Benard (1991) has identified three characteristics of communities that foster resilience. These characteristics are: availability of social organizations that provide an array of resources to residents; consistent expression of social norms so that community members understand what constitutes desirable

behavior; and opportunities for children and youth to participate in the life of the community as valued members. Hill, Wise, and Shapiro (1989) emphasize the role of communities as key contributors in the revitalization of failing urban school systems. Hill, Wise, and Shapiro believe that troubled urban school systems can only recover when the communities that they serve unite in decisive efforts to improve their performance.

One of the clearest signs of a cohesive and supportive community is the presence of social organizations that provide for healthy human development (Garmezy, 1991). Health care organizations, child care services, job training opportunities, religious institutions, and recreational facilities are only some of the myriad of social organizations that serve human needs. In communities where there is a large, well-developed, and integrated network of social organizations, there are fewer social problems (Miller & Ohlin, 1985).

Communities that hold and express standards for good citizenship provide protective mechanisms for residents. This is recognized most clearly in studies that explore the importance of cultural norms on student alcohol and drug use (Bell, 1987; Long & Vaillant, 1989). Nettles (1991) analyzed the effectiveness of community-based programs available to African-American youth. She found that school-based clinics are only partially effective in reducing risk. Community-based programs that fostered resilience provided more social support and adult aid, gave concrete help on tasks, and provided opportunities for students to develop new interests and skills.

The role of religion and faith has also been identified as a protective factor for at-risk students. Masten and her associates (1990) identified both the beliefs based on abstract relationships with religious protective figures and the concrete relationships with members of the religious community as protective factors. Religious beliefs are helpful across ethnic groups and social classes, and provide standards and expectations to guide children's behavior.

Urban communities often lack a well-integrated network of social organizations for children and youth. The services provided by these organizations are often compartmentalized and fragmented. In their analysis of the impact of social policies on the quality of human resources available to African-American youth, Swanson and Spencer (1991) emphasize the dual importance of finding ways to reduce risk and making opportunities and resources available in order to break the negative chain reactions associated with adversity. Because schools have the most sustained contact with children and their families, public education officials should take into consideration, when designing their school improvement programs, the potential benefits of coordinating and integrating children's services across

school and community organizations (Holtzman, 1991; Kirst & McLaughlin, 1990; National Center on Education in the Inner Cities, 1990).

Some promising new modes of cooperation are already being explored around the country. New coordinating agencies have been created in some cities, for example, out of the offices of city mayors and councils, working toward the coordinated involvement of businesses, labor unions, health-related resources, social agencies, and schools. But a number of these programs are quite new and are still seeking basic funding, leadership, and mechanisms for effective communication (Wang, 1991). Nevertheless, there is an emerging pattern of program design considerations across these new community enhancement models (National Center on Education in the Inner Cities, 1990). They include the following:

- Services needed by children, youth, and their families should be provided in a continuing fashion without artificial discontinuities. This suggests an important vertical coordinating function or coordination through time, as well as horizontal or cross-agency coordination.
- Definite strong provision must be made for staff to coordinate efforts across agencies. Such coordination requires time and effort.
- Agencies, including schools, must be ready to respond to leadership from various sources, not just the traditional "in-house" officer.
- There should be readiness to conduct services or programs in a variety of settings, going beyond traditional arrangements.
- Services are unlikely to be used unless there is very good communication concerning them. Basic information about programs must be spread in every community, and steps must be taken to inspire trust and confidence in the personnel and agencies involved.
- Opportunities should be sought to incorporate all kinds of community resources, including university resources and expertise in building community-school connections, especially through projects of a broad multidisciplinary and multiprofessional nature.

FOSTERING RESILIENCE: A NEW DIRECTION IN EDUCATIONAL RESEARCH AND DEVELOPMENT

Research on resilience, in general, and on identifying ways to foster resilience, in particular, has generated new approaches to studying and designing innovative interventions. This new research focuses not only on identifying causes of risk and adversity, but on understanding the protective mechanisms that reduce risk and enhance success of all students.

To date, few researchers have studied the development and education of children and youth in at-risk circumstances, such as the inner-city or poor rural communities, using a research model that searches for educational risk and protective factors. A better understanding of the lives and educational

potential of children and youth in the inner cities, for example, can be achieved in part by studying resilient children and the role of the family, schools, and communities in fostering resilience among children in at-risk circumstances.

The Role of the Family in Fostering Resilience

The quality of the caregiving environment is central to the development of resilience. In examining the impact of the environment on resilience, the role of the family is a logical starting place. Parents and families provide the first protective agents in the child's environment (Masten, Best, & Garmezy, 1990). They note that parents:

> . . . nurture mastery motivation and self-esteem as well as physical growth. Parents provide information, learning opportunities, behavioral models, and connections to other resources. When these transactional protective processes are absent or are severely limited for prolonged periods, a child may be significantly handicapped in subsequent adaptation by low self-esteem, inadequate information or social know-how, a disinclination to learn or interact with the world, and a distrust of people as resources. (p. 438)

Studies of at-risk families seek to identify barriers that impede the development of children and features of the caregiving environment that fosters resilience.

Fostering resilience in children requires family environments that are caring and structured, hold high expectations for children's behavior, and encourage participation in the life of the family. These characteristics are among the protective factors that can foster resilience (Benard, 1991). Most resilient children have at least one strong relationship with an adult (not always a parent), and this relationship diminishes risks associated with family discord. Receiving care and affection is critical throughout childhood and adolescence, but particularly during the first year of life (Rutter, 1979b; Werner & Smith, 1982).

Rutter (1990) documented the importance of good parent-child relationships in a review of data from short-term prospective studies, intergenerational studies of high-risk populations, and studies involving retrospective recall of adults. Results from all these studies provide evidence that secure and supportive personal attachments early in life make it likely that individuals will be protected against adversity in later life. Positive social relationships throughout life also provide benefits. Positive, intimate relationships correlate with a positive self-concept and can enhance the individual's worth within the social network.

The impact of caring and support is exemplified in Rutter's (1979b) study of discordant families. Of children from discordant families, 75% exhibited conduct disorders when they failed to have a positive relationship with either parent, as compared to 25% when children maintained a good relationship with

at least one parent. In their review of studies of competence under stress, Masten, Best, and Garmezy (1991) provided evidence that family instability and disorganization predicted school disruptiveness. Children whose families had a history of marital instability and frequent moves were more often rated as disruptive by peers and teachers. However, in contrast to these conclusions, there is some evidence that the stress produced in discordant families can be mitigated. Benard (1991) found that even though divorce produces stress, the availability of social support from family and community can reduce stress and yield positive outcomes.

A topic of research that has received more attention recently is the impact of mobility on children's lives. Recent statistics provided by the U.S. Department of Commerce (1987) documented that 19% of the nation's school-aged children move in a single year. Lash and Kirkpatrick (1990) report that some of these moves are the result of seasonal jobs (e.g., migrant farm workers), some reflect job or military transfers, and others are due to divorce and financial instability. Migration has shown to be a serious and pervasive risk factor for student learning among poor and minority children, as revealed by two large national surveys (Long, 1975; Straits, 1987). Moving generally keeps children of lower SES from attaining their normally expected achievement and grade level.

The effect of mobility is particularly large in one case. Moving from a community of lower SES to one of higher SES often results in substantial grade retardation of lower SES children (although it does not appear to affect middle SES children as much or at all). Early grade retardation is important, because it forecasts further retardation, poor achievement, and dropping out--a phenomenon known as the "Matthew effects" (Walberg, 1984; Wang, 1990).

Perhaps the most pressing problems facing children and families in at-risk circumstances, such as the inner cities, are the problems faced by the adolescents in the community--behavior problems, substance abuse, academic underachievement, and teenage pregnancy. The intervention literature strongly suggests that these problems cannot be addressed without direct involvement of the family (Liddle, 1991; Benard, 1991). The solution to many of these problems lies within the family.

Garmezy (1985) established the importance of several family-related variables in protecting children against adversity. These variables include family cohesion, family warmth, and the absence of discord. A supportive family environment is critically important to the development of resilience. In addition to holding high expectations of children (i.e., that they will succeed in school and become good citizens in their community), households that are structured and employ consistent discipline, rules, and regulations produce better outcomes among children from at-risk families (Bennett, Wolin, & Reiss,

1988). Masten et al. (1990) related poor household maintenance and housekeeping to disruptiveness in school.

Benard (1991) points to the importance of children's participation in family and household activities in fostering resiliency. Benard cites the work of Werner and Smith (1982), who emphasized the value of assigned chores, caring for brothers and sisters, and the contribution of part-time work in supporting the family. These behaviors help establish that children can truly contribute and improve their circumstances. Helping behaviors on the part of children enhance their self-esteem and ultimately foster resilience.

Family Involvement with Schools

The importance of family involvement in enhancing children's school performance has been consistently documented (Chan, 1987; Epstein, 1984; Moles, 1982). Families' involvement has been found to facilitate increased communication between schools and homes. The active participation of family members in students' learning has improved student achievement, increased school attendance, decreased student dropouts, decreased delinquency, and reduced pregnancy rates. These results are present regardless of racial, ethnic, or social class membership (Peterson, 1989).

A series of research syntheses reported by Graue, Weinstein, and Walberg (1983) and Iverson and Walberg (1982) provided strong evidence that school-based family involvement programs work, and that there is a significant correlation between school achievement and features of the home environment. Furthermore, parents who participate in family involvement programs were found to feel better about themselves and more likely to enroll in courses that advance their own education (Flaxman & Inger, 1991). However, based on data drawn from the NELS study of eighth graders in 1988 (U.S. Department of Education), Peng and Lee (1991) found that direct parental involvement and assistance are not as important as the availability of learning opportunities, frequent parent-child conversations, and higher education expectations. Furthermore, they found that having more family rules without complementary support does not relate to higher achievement.

Educational intervention programs designed to involve family members are also significantly more effective than programs aimed exclusively at students (Walberg, 1984; Weikart, Epstein, Schweinhart, & Bond, 1978). A research study on direct parental involvement was conducted by Comer (1986) in a low-performing school that ranked 32 out of 33 in New Haven, Connecticut. Using strategies for parent involvement over several years, the same school, populated by at-risk students, improved its rank to third out of 26 schools. Similar results have been attained with other low-performing schools. Comer

attributes results to the success of management teams involving parents, parent-developed workshops, parent involvement in tutoring programs for children, and parents' assisting teachers in planning classroom activities.

Epstein (1987) developed a theory of family-school connections after recognizing four important microsystems that impact the development of children, families, peer groups, schools, and neighborhood/communities. The degree of overlap among these microsystems represents the extent to which they share values, goals, and understandings of the social and cultural processes governing everyday life. The greater the overlap among domains, the more common their cultures and structures. Generally, there is some evidence and strong logic behind an argument that the greater the overlap among microsystems, the more consistent their joint impact on the developing person. When the home, the school, peers, and the larger community are working together, the greater their impact is in a consistent direction.

Several types of family involvement programs are being implemented by schools across the country. Some programs involve families directly in school management and "choice" and encourage parents' actual presence in the school. Others are focused on training families in communication skills and helping their children to develop good study habits and high expectations. Still others focus on family resource and support programs. These programs provide a host of direct services to families and children. They may involve home visits, job training, career counseling, health care, mental health, and social support services (Wang, Haertel, and Walberg, 1992).

The Role of Teachers in Fostering Resilience

The importance of external support systems as protective mechanisms that enable children to cope under adverse conditions has been stressed in the literature on childhood resilience. Teachers can play an important role in reducing stress by providing the positive supports needed by children in adverse conditions. The contribution of teachers has been documented in the words of the children of Kauai who took part in Werner's (1989) longitudinal study of the long-term effects of prenatal and perinatal stress. Of the 142 high-risk children identified in her study, 72 "beat the odds" and became competent, successful adults. Describing these "resilient" children as "easy-going" and "even-tempered," teachers praised the students' problem-solving abilities and competence in reading. The school became a home away from home for the children; it was a refuge from a chaotic home life. Favorite teachers became role models in whom the children confided when their own family was threatened by dissolution.

The value of teachers providing concern and support is also described by Benard (1991), who quotes Noddings (1988):

> At a time when the traditional structures of caring have deteriorated, schools must become places where teachers and students live together, talk with each other, take delight in each other's company. My guess is that when schools focus on what really matters in life, the cognitive ends we now pursue so painfully and artificially will be achieved somewhat more naturally. . . . It is obvious that children will work harder and do things--even odd things like adding fractions for people they love and trust.

In their study of public and private high schools, Coleman and Hoffer (1987) point to the role of caring and engaging teachers in helping high school students develop the values and attitudes necessary for persevering in their schoolwork and achieving high grades. They stress the importance of the personal relationships among teachers and students--sustained, inter-generational, intimate relationships of moderate intensity that support students' academic and social endeavors.

A major risk factor that contributes to learning problems encountered by students, particularly in inner-city schools serving students from diverse ethnic and cultural backgrounds, is the disconnection between schooling experience and family life. Among some of the most critical facilitating factors ameliorating this problem of disconnection are teachers' sensitivity to student diversity and their ability to provide learning experiences that are responsive to individual differences. Effective teachers serve to reduce vulnerability and stress and use a variety of strategies to ensure the personal and academic competence of their students.

Students bring to the learning situation a diversity of cultural and language backgrounds and prior knowledge. These differences may be important sources of variation on how and what students learn. How students interact with the classroom and school environment and the demands for school learning can limit or enhance the students' access to learning resources and, therefore, learning success. Effective teachers play an important mediating function in minimizing "risk" or vulnerability and maximizing resources that can serve to enhance student development and promote resilience.

Campione and Armbruster (1985) point out that children with excellent comprehension skills usually relate new information to their personal experiences. Differences in prior knowledge may be the product of cultural differences. These differences may be important sources of variation in students' strategy use and in their learning outcomes. Students from culturally diverse backgrounds may not only have difficulty accessing background knowledge, they may also have knowledge deficits. They may not be able to access prerequisite prior knowledge without help from teachers. This lack of background knowledge is sometimes remediated by using culturally relevant texts and materials. Palincsar and Klenk (1991) recommend that teachers use universal themes with which all students can identify as a method

to make new content more easily accessible. Effective teachers who are familiar with the types of background experiences students bring to the classroom not only select materials that are culturally relevant, but make it easier for the students to relate to their classroom experience and to access their prior knowledge.

Recently Ogbu (1992) identified several ways that teachers can help at-risk children with cultural and language difficulties perform in school. He recommends that teachers learn about students' cultural backgrounds and use the knowledge to organize their classrooms and instructional programs. Teachers can gather information about the cultural backgrounds of at-risk students through: observing students' behaviors; asking students and their families questions about their cultural practices; conducting research on ethnic groups in the school setting; and reviewing published research on children from different cultural groups. The information teachers gather can then be used to design and implement instructional programs, to help students get along with each other, and to improve communication among school staff and students' families. In all cases, however, recognition of cultural diversity, which can foster resilience, must be based on actual knowledge of different cultural groups and how these cultures differ from the mainstream culture. According to Ogbu, teachers can increase the success of interventions by recognizing whether the cultural frame of reference of an at-risk minority is oppositional to the cultural frame of reference of mainstream American culture. Without taking these differences into account, teachers will be less able to increase learning and self-esteem among at-risk students. If at-risk students are immersed in a culture which has an oppositional framework to the mainstream culture, they may be less inclined to communicate with school personnel and peers from different ethnic groups and are likely to participate less fully in the life of the school.

Teachers effective in responding to student diversity also acknowledge the importance of individual difference variables in their planning and interactions with students. They use a variety of strategies in creating classroom learning environments that maximize each student's opportunities for learning success (Corno & Snow, 1986; Wang, 1990; Wang & Walberg, 1985). Below is a list of some of the methods identified by Corno and Snow (1986) that teachers use to adapt instruction to student differences to ensure the learning success of every child.

- Manipulate classroom organizational structures, such as the use of short-term, nonstigmatizing groups, learning centers, and reward structures.
- Vary the use of materials that present new information and support problem-solving, including varying the amount of time spent on reviewing previously learned materials, the number of examples used to provide further explanation and illustration, the use of summaries, points of emphasis, and modeling.

- Vary the types of support materials used, including aides, peer tutoring, a variety of media, and other methods.
- Vary the amount of instructional support and available time for learning to accommodate the needs of the individual student.
- Vary the level, form, and number of questions asked. Ask more higher order questions so that students must go beyond the material they were presented.
- Vary the nature and amount of reinforcement given for correct answers, as well as the level of information provided when a student gives an incorrect answer.
- Enhance the students' use of inquiry processes by implementing "inductive teaching" strategies.
- Vary the ways information is presented during instruction to prompt students to give their own examples of new principles or content learned.
- Facilitate students' use of self-regulating techniques, such as self-monitoring or self-reinforcement, by providing a variety of problem-solving opportunities in the classroom instruction-learning process.

The role of instructional mediation has been identified as an important resource for students, particularly those from diverse cultural backgrounds and/or those requiring greater-than-usual instructional support. Different instructional activities place different cognitive demands on students and can alter their information-processing burden. Learning complicated material is difficult and requires a variety of mental resources, including cognitive processing of the new information and metacognitive activity. Instruction mediates student cognition. As instruction bears more of the information-processing burden, a student's general intellectual abilities are less critical. Little instructional mediation provides many opportunities for students to discover more principles and concepts themselves. An example of more instructional mediation might involve the use of teachers modeling cognitive skills. In this case, the teacher provides a model of expert performance, giving novice learners an opportunity to see how new problems are solved. Examples of teachers modeling powerful thinking strategies include teachers thinking aloud as they read a text; talking aloud as they solve a mathematics problem; and allowing students to watch them plan and revise an essay (Means & Knapp, 1991).

Expert scaffolding is another technique that has been shown to be effective in enabling students to handle a complex task by the teacher providing guided practice (Collins, Brown, & Newman, 1990). Both the use of mediated instructional techniques and expert scaffolding have been found particularly effective with students with special needs or those otherwise considered to be at risk (Corno & Snow, 1986; Feurstein, 1980; Means & Knapp, 1991).

In addition to providing supportive instruction, effective teachers serve to foster resilience by finding ways to promote self-concept and self-responsibility for active learning (Wang & Palincsar, 1989).

As Bandura (1977, 1982) explicated in his cognitive theory of self-efficacy or perceived self-competence, self-efficacy is best promoted through mastery of new experiences. When students become convinced they are instrumental in their learning success, they work harder to overcome difficulties.

Students develop information about their own efficacy from several sources, including: memories of similar past experiences; watching peers, teachers, and others master a task; attending to their own level of motivation and interest in the task; and persuasion and exhortation by others (Winne, 1991). These sources help students develop expectations for their own success. Teachers can foster resilience by providing students with opportunities to set realistic expectations, and by helping them master new experiences. Teachers who work to develop their students' ability to be active learners help strengthen students' ability to overcome adversity.

The role of mentoring has evolved during the past decade and many school reformers believe it to be a powerful intervention. This belief is based in part on the work of researchers such as Lefkowitz (1986), who highlighted the role of caring adults in fostering resilience. Lefkowitz reported that the majority of 500 at-risk youths identified a caring adult as contributing strongly to their success. Mentoring programs in schools have been developed to address problems such as school dropouts, school-to-school transitions, school-to-work transitions, drug and alcohol use, teen pregnancy and parenting skills and family literacy (Benard, 1992). Typically, these programs have involved not only teachers, but a variety of school personnel and community members. Nevertheless, in schools, teachers play a key role in providing empathic support to pupils and in assisting students to set achievable goals; two behaviors involved in successful mentoring. Although many educators have regarded mentoring as a successful intervention that can contribute to programs designed to break the cycle of disadvantage, Benard (1992) cautions that the long-term effectiveness of planned mentoring programs has not yet been established. The effectiveness of spontaneous mentoring versus planned mentoring needs to be further explored. However, teachers are in frequent contact with students and along with other adults in the school environment can be encouraged to be supportive and caring to students, and thus promote resilience.

The Role of Peer Support in Fostering Resilience

The academic achievement of at-risk students is the product not only of a child's intellectual ability, but also the school's climate and the social support networks available from families. Clark (1991) states that after the family, peers are the most important source of support. Social support networks from peers provide children and adolescents with a sense of being valued, cared for, and loved.

These support networks not only facilitate the development of an individual, but serve as a protective shield against stress. Peers, family, and the school support system can all provide protection.

Coleman and Hoffer (1987) describe how students in boarding schools are supportive of their friends when their families disengage. Other strong support for the influence of peers is that the use of cooperative learning strategies is the single most effective school-based intervention for reducing alcohol and drug use (Bangert-Downs, 1988). Similarly, Watt et al. (1990) provide evidence that children of divorced parents find respite from stressful home situations through an external social network that allows them to distance themselves from stressed parents ("adaptive distancing"). The school performance of children of divorce is affected by the peer social network in which they participate, more so than the school performance of children from intact homes. Children of divorce find companionship, love, self-esteem, and care from school friends to a greater degree than children from intact homes.

Research also suggests that peers have a significant impact on a student's self-perceived academic competence and attitude toward school. Cauce (1986) found that the peer group's attitude toward school was a significant predictor of grades, achievement test scores, value placed on being a good student, and perceived competence. Patchen (1982) also found that students with peers who valued high achievement spent more time on homework, finished more of their homework assignments, attended school more regularly, were tardy less often, and missed class without permission fewer times.

Peers exert significant influence on students. Opportunities to interact with students who have high achievement motivation, positive attitudes toward school, and a positive academic self-concept are beneficial to students who are considered at risk or require special or compensatory education programs. Mentoring programs, cooperative learning programs, cross-age tutoring, use of small learning groups, and extracurricular activities provide mechanisms for children and youth to develop positive peer relationships and stronger support networks that serve as a protective process to foster resilience.

CONCLUSION AND DISCUSSION

The meaning of the term "resilience" offers a provocative challenge to educational researchers and practitioners. In a single word, it can suggest several useful notions and priorities. For educators, the term "resilience" suggests the potential benefits of early experience; the need to mitigate adverse subsequent circumstances; and the importance of educationally important and alterable risk and protective factors in communities, homes, peer groups, schools, and classrooms. For educational researchers, it offers the intriguing hypothesis that early alterable (possibly sustained) conditions fortify students to persist successfully through inevitable and endemic difficulties.

The construct of resilience has been studied for nearly two decades by psychiatrists, clinical psychologists, developmental psychologists, and other mental health professionals. Originally, their research focused on identifying the characteristics and attributes of children who were resilient. Over time, the focus of this research shifted to determining the protective mechanisms and processes that foster resilience.

A parallel development emerged in educational research in the 1980s. Researchers began to recognize that, like children who "beat the odds" in the developmental psychopathology data base, some schools have been more effective in achieving higher levels of learning success of their students than would be expected, given their multiple risk factors. These schools had high achievement gains despite serving impoverished families and communities with multiple adversities and few resources.

Much of the recent research, however, focuses on the influence of ethnic and socioeconomic status of at-risk students on their learning and school achievement, as well as ways that at-risk populations differ from the mainstream. Lee, Winfield, and Wilson (1991), for example, found family characteristics to be an important differentiating factor between low- and high-achieving African-American students. Using the National Assessment of Educational Progress (NAEP) data sets (U.S. Department of Education, 1991), they found that higher achieving African-American students tend to come from higher social classes, and a higher proportion of higher achieving students have working mothers. In addition, these students are twice as likely, compared to their low-achieving counterparts, to attend Catholic schools (10% vs. 5%), and are somewhat more likely to come from urban areas.

Although schools make significant efforts to "remediate" or "compensate" for poor academic performance, many at-risk students still experience serious difficulties in achieving learning success. They need better help than they are now receiving. The prototypical remedial or compensatory education program often contributes to children's learning problems. As noted by Wang, Reynolds, and Walberg (1988), substantial evidence shows that students may actually receive inferior instruction when schools provide them with specially designed programs to meet their greater-than-usual learning needs. In many cases, selecting and tracking students for instruction in "specially designed" programs, based on certain perceived student differences, involves delivering radically different and not always appropriate content to some students (Allington & Johnston, 1986; Haynes & Jenkins, 1986; Oakes, 1986). There is a tendency to neglect fundamental content in these special programs, and to provide less instruction in higher order, advanced skills. For example, students with special needs are most likely pulled out of the

regular reading classroom and receive drills in phonics, word attack skills, and vocabulary, whereas advantaged students are exposed to reading instruction that emphasizes comprehension and related higher order thought processes.

Similar experiences occur in mathematics instruction for low-achieving students and those considered at risk of failing or dropping out of school. Comprehension, problem solving, and higher order reasoning are less often emphasized in the instruction of these children. Classroom observational studies document that these students experience less instruction on higher order skills than their advantaged counterparts (Oakes, 1986). Furthermore, teachers tend to underestimate what students with special needs or those considered at risk can do. They tend to delay the introduction of more challenging work and not provide students with a motivating context for learning (Knapp & Turnbull, 1990).

Research studies on resilience should focus on the complex interrelationships that characterize the development and functioning of resilient individuals, and interventions that foster such patterns of resilience. Lewis (1991) pointed to the need for a paradigm shift, away from research focusing on a single precipitating event to the interaction of a multitude of factors influencing behavior. Research should also take into account the context of the individual (ecological models), rather than ignore the context; use relative terms to describe behaviors, rather than traits or characteristics; specify underlying mechanisms that promote resilience, rather than identify a list of attributes of resilient children; and provide interpretation, including personal reflections, on the part of the children being followed, rather than depend only on objective assessments.

The rich research bases of developmental psychopathology and effective instruction and school effects can help identify educational practices that inspire and sustain achievement of all students, including and especially those considered to be at risk. The research bases can also help identify school/community connections that serve to mobilize resources, promote positive attitudes and behavior that strengthen the enabling role of families, and ensure student learning success. These lines of research point to characteristics of successful inner-city schools; the process by which unsuccessful inner-city schools are turned around; ways to create protective mechanisms and resources in inner cities to ensure student outcomes; and analysis of the schools' programs, climate, ethos, teachers, and other salient features, to determine biological, psychological, and environmental sources on resilience (National Center on Education in the Inner Cities, 1990).

New research that addresses the concern of factors influencing educational resilience and ways to foster educational resilience is beginning to emerge. It can develop a better understanding of student diversity by studying children who perform at the margins of achievement, and using sophisticated

statistical techniques such as data envelopment analysis to identify efficient and effective schools. Along with research on resilient children and schools, there has also been an increase in research on the role of communities in fostering competence and resilience. New research studies aiming to better understand the ecology of cities point to the many factors--economic, political, and sociological--that influence inner-city educational outcomes. Attention is also being paid to the ways to coordinate school and community services in order to make a more integrated network of resources and protective mechanisms available to children and their families.

Considerable educational research on school learning and other educational outcomes is consonant with the concept of resilience advanced in studies of developmental psychopathology. In the absence of definitive research, however, it may be reasonable for educators to focus on the implications of intervention studies that will provide direct evidence for understanding educational resilience and the mechanisms for fostering it. It seems imperative and urgent for researchers to probe the validity and extent of the idea over extended periods of time. By definition, resilience implies longitudinal studies of critical segments of the life course.

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The Effectiveness of Collaborative School-Linked Services

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The research reported herein is supported in part by the Office of Educational Research and Improvement (OERI) of the U.S. Department of Education through a grant to the National Center on Education in the Inner Cities (CEIC) at the Temple University Center for Research in Human Development and Education (CRHDE). The opinions expressed do not necessarily reflect the position of the supporting agencies, and no official endorsement should be inferred.

INTRODUCTION

Since the late 1980s, Americans have been inundated with media reports describing the increasingly dire circumstances surrounding our nation's children. Families in the United States are beset by urgent problems, including poverty, teenage pregnancy, single parenthood, substance abuse, limited health care, and inadequate and unaffordable housing (Levy & Copple, 1989). These problems place children at risk of educational failure and, by necessity, place schools at the center of interconnected social problems. Public and private community agencies provide services such as counseling, financial assistance, medical treatment, and job training for at-risk children and their families. Many of these agencies, however, are subjected to heavy caseloads, limited resources, and isolation from other related service providers (Chang, Gardner, Watahara, Brown, & Robles, 1991). Many professional groups now agree that the problems of at-risk children and their families cannot be tackled by our schools alone (Council of Chief State School Officers, 1989). Kirst (1991a) warns that schools may no longer exist in isolation, relying on their school boards and separate property taxes to guarantee the well-being of students and programs. Rather, broader social policies must be established to protect the nation's at-risk children and their families. One response to the call for broad social policies has been the establishment of interagency, collaborative programs that link schools and other service agencies.

A variety of programs for school-linked health and human services delivery are being created across the country to implement innovative strategies to provide services to children and youth in high-risk circumstances. These programs reach out to those at greatest risk and mobilize resources to reduce and prevent school dropout, substance abuse, juvenile delinquency, teen pregnancy, and other forms of so-called "modern morbidity." Nearly all of the "school-linked" programs seek to develop feasible ways to build connecting mechanisms for effective communication, coordinated service delivery, and mobilization of the latent energies and resources of communities.

Although educators and social service agencies have enthusiastically embraced collaborative programs, their effectiveness has not been empirically established. Most innovative programs have not provided evidence of replicable, long-term, beneficial effects on students. The lack of empirical bases for assessing the near- and long-term impact of these innovations has been noted as a source of concern. Schorr (1988) concludes that: "Many Americans have soured on 'throwing money' at human problems that seem only to get worse. They are not hard-hearted, but don't want to be soft-headed either" (p. xvii). Increasingly, many Americans recognize the problem of costly social programs that are not evaluated for their effectiveness through careful documentation of immediate, intermediate, and long-term effects. They argue that evaluators too often assess only the impact of narrowly defined services, but fail to assess the combined effects of multiple-focus interventions. Policymakers, on-line professionals in

schools, and the various service delivery agencies do not have adequate information about program features and the implementation of innovative programs. A data base of systematically collected empirical findings on the range and relative effects of collaborative school-linked services serving at-risk children and their families is just being established.

This paper systematically reviews research on the effectiveness of collaborative school-linked programs. It first briefly discusses the history and current state of the practice of collaborative school-linked programs. Then the design and findings of 55 school-linked programs, which have collaborative elements that have been either evaluated or researched, are summarized. Finally, conclusions are drawn concerning the impact of these programs on students and families, and implications for research and practice are discussed.

A Brief History of Collaborative School-Linked Services

Since the 1890s, improving the plight of at-risk children has been one of the goals of school systems in the United States (Tyack, 1992). For over 100 years reformers have advocated using schools as a base from which a number of social ills could be remedied. Tyack (1992) provides a historical analysis of the development of school-linked services that documents the waxing and waning popularity of collaborative programs to meet the needs of at-risk students and their families. He finds that the past century has demonstrated that school reform, including the provision of health and human services, typically occurs from the top down, with advice from the community being ignored and programs intended for the poor frequently rooted in the wealthiest communities.

Reformers in the 1890s campaigned for increased services for at-risk children. They advocated medical and dental examinations, school lunches, summer academic programs, recreational activities, and school-based child welfare officers. Many of the health-oriented programs of the 1890s were based on a philosophy of improving the human capital of the nation's children and ensuring equal educational opportunity for them. However, reformers were not convinced of the capacity of parents, especially immigrant parents, to provide for all their children's needs. Sadly enough, social reformers rarely sought input from parents as they designed and implemented these new services. In his analysis of health and human services in public schools from a historical perspective, Tyack (1992) notes that, while parents recognized the value of health and medical services provided, including improved nutrition, access to physical education, and academic remediation, some parents found these programs intrusive and sometimes fought these reforms to preserve their own authority, as well as their ethnic, religious, or community values. Political reactions to these programs varied. Conservatives expressed concern that

the school's academic mission would be diluted. Progressive educators lauded the new services and believed that without these services students would drop out of school. Financial officers worried about finding money to support the new services. Despite these varied reactions, collaborative school-linked services were entrenched in our nation's public schools by the end of the 1930s.

Tyack (1992) reports that during the Great Depression, budgets and staffs for school-based services, especially those devoted to improving children's health, increased. By 1940, almost all cities over 30,000 had some form of public health service (70% run by the schools, 20% by health departments, and 10% by a collaboration of both). Other services, such as lunches and mental health, did not enjoy such sustained commitment but reappeared after World War II. During the late 1940s, school lunches became the norm, despite conservative fears of establishing a paternalistic state. Mental health programs were instituted in well-to-do school districts during the 1950s and in poorer ones in the 1960s to address the dropout problem. During the 1960s, education was viewed as the vanguard against poverty, and funding for school-based social services was increased. The collaborative programs established after World War II were more sensitive to the limitations of top-down models of reform and involved a greater degree of community participation. The enlarged role of the community, however, sometimes spawned conflicts concerning program goals and operations among community groups, school officials, and service agencies. Despite these difficulties, Lyndon Johnson's "War on Poverty" had reached millions of children by 1970, and collaborative programs had found a niche in public schools. Collaborative programs received support from influential community groups; did not clash with prevailing instructional approaches; and met some of the needs of poor, at-risk children.

Tyack (1992) showed how collaborative programs were transformed as they became established in the public schools. To handle truancy, for example, some of the school social workers became part of the school's bureaucracy. This change represented a shifting of goals among school social workers. In an effort to enhance their professional status, some social workers began to base their work on models from mental health and psychology, while others began to work with more privileged clients. To ensure the political viability of new social services, legislators often generalized such programs to the general public. Services were delivered best in wealthy communities with large property tax bases. Thus, both the children of the wealthy and the poor became recipients of collaborative interagency services originally intended only for at-risk students.

During the late 1970s and early 1980s, the role of the schools shifted toward producing students who could compete in the global marketplace and maintain the nation's competitiveness. This shift combined with significant budget cutbacks reduced some of the social services provided. Despite the

reduction in services, teachers accounted for 70% of all school employees in 1950 but only 52% by 1986, indicating that schools had become multipurpose institutions that looked beyond the academic performance of their students (Tyack, 1992).

Not everyone views collaborative programs and school-linked services as the panacea to meet the needs of at-risk students. In the controversial book Losing Ground, Charles Murray (1986) argued that government services, including school-linked collaborations, produced long-term negative consequences for recipients. He maintained, for example, that raising welfare benefits increased the welfare rolls and that school-based health clinics contributed to the increase in the number of unmarried pregnant teenagers. Murray cautioned policymakers of the unintended effects that may emerge as government services proliferate.

Kirst (1991b) identified several approaches to reducing the problems that surround at-risk children and families, including the use of vouchers, tax credits, a negative income tax, and less costly approaches (such as traditional parental care for children). The scope of this paper, however, is limited to the effects of collaborative school-linked services in meeting the needs of at-risk children and their families in an attempt to answer the question: Do collaborative school-linked services have a demonstrable impact on the lives of the at-risk children and families they serve?

The Current Status of Collaborative School-Linked Services

In Within Our Reach: Breaking the Cycle of Disadvantage (Schorr, 1988), Lisbeth Schorr unambiguously set forth the belief that today's complex social problems can be ameliorated through collaborative social programs. Over the course of 20 years, she gathered information from researchers, practitioners, administrators, and public policy analysts. Based on research on risk and protective factors, she identified risks that affect the lives of children, including premature birth; poor health and nutrition; child abuse; teenage pregnancy; delinquency; family stress; academic failure; persistent poverty; inaccessible social and health services; and inadequate housing, medical treatment, and schools. She argued that these risks require a societal response, not simply a response from the at-risk child or family.

Schorr held that there is plenty of information available on both risk factors and effective interventions to guide action. She identified three principles that capture the role and function of collaborations in breaking the cycle of disadvantage: (a) a call for intensive, comprehensive services that address the needs of the "whole" child and the community; (b) a recognition that the family should be

supported, not displaced, by other social institutions; and (c) a shift in efforts from remediation to early intervention and eventually to prevention. She is one of many advocates calling for collaborative, integrated services to supplement the schools' role in society (see Behrman, 1992; Chang et al., 1991; Hodgkinson, 1989; Melaville & Blank, 1991; Morrill & Gerry, 1991; National Commission on Children, 1991).

Levy and Copple (1989) provide evidence of state-level actions that support the formation and implementation of collaborative, integrated school-based services from 1975 to 1989. They record that in that 14-year period, 15 written agreements were prepared; 20 interagency commissions were formed to coordinate state and local agencies; 88 committees, commissions, and task forces were convened; and 63 collaborative programs and projects were implemented. These counts demonstrate the groundswell of state-level efforts to develop collaborative, integrated services. Further evidence of the popularity of collaborations was recently reported in the 24th annual Gallup poll that showed that 77% of adults polled favored using schools as centers to provide health and social-welfare services by various government agencies ("Public in Poll," 1992).

A Definition of Collaborative School-Linked Programs

Reflecting such thinking, many new educational programs have collaborative elements. Bruner (1991) identified three critical features of collaborative programs: joint development and agreement on common goals and objectives, shared responsibility for the attainment of goals, and shared work to attain goals using the collaborators' expertise. Bruner also found that because collaboration requires shared decision making and consensus building, it cannot be imposed hierarchically. He pointed out that collaboration is not simply increased communication and coordination, but rather requires the development of new joint goals to guide the collaborators' activity. Morrill (1992) asserted that collaboration requires concerted action among committed partners. In this paper, collaboration is defined as the process of achieving a goal that could not be attained efficiently by an individual or organization acting alone.

Rationale for Collaborative Programs

Larson, Gomby, Shiono, Lewit, and Behrman (1992) described the prevalence of children's problems, including increases in incidence and costs. They cited, for example, increases in juvenile delinquency and the need for foster care. Other types of children's problems, such as dropout and teenage pregnancy rates, have decreased, but become costlier in terms of benefit expenditures and reduced

productivity. Statistics collected on children's problems appear to support the need for new approaches to service systems. Melaville and Blank (1991) identified four flaws in the current system of organized services for children: (a) a crisis-oriented system that does not prevent problems, (b) the compartmentalization of problems into rigid categories, (c) the lack of communication among various agencies, and (d) the provision of specialized services that are not able to address the interconnected problems of children and their families.

Kirst and Kelley (1992) asserted that instrumentalism and incrementalism constitute the dominant political pattern evidenced in policy toward at-risk children. Instrumentalism is the justification of social interventions by the economic or social returns they produce. Increasingly, individuals recognize the nation's future will require increased productivity on the part of all segments of society, including underprivileged families and their children. Therefore, it becomes useful for society to invest in school-linked services as a method for meeting the needs of these families. Incrementalism is demonstrated, according to Kirst and Kelley (1992), in the legal practice of *parens patriae*. In the United States, social interventions only occur in cases of extreme parental and familial dysfunction. Preventive action is very rare. *Parens patriae* is also related to the traditional American belief in limited government. Given the federal budget projections, it is likely that collaborative school-linked services will be implemented to increase the efficiency and effectiveness with which social and health care services are delivered to at-risk students and their families.

The development of collaborative school-linked services is a strategy for meeting the complex needs of children and their families. Advocates of collaborative programs believe that making agency services available in one location, coordinating the goals of the agencies, and involving families, agencies, and schools in the development of the goals will improve at-risk students' quality of life.

The Role of Schools in Collaborative School-Linked Services

Schools have become the location of choice for collaborative programs. Larson et al. (1992) explained why schools should serve as the central location for a multitude of agencies that provide services for children. They argued that schools are enduring institutions that play a critical role in the life of communities. Schools have played this role in the past (Tyack, 1992), and thus can deliver these services to children and their families in a less stigmatizing manner.

Wang, Haertel, and Walberg (in press) described the relationship between educational achievements and children's at-risk status. Because education is a critical component in children's future economic success and personal welfare (Walberg, 1987), many individuals support the location of

noneducational services in the local school. These services can help guarantee the educational accomplishment of children. Arguably, schools, which are the prime vehicle for delivering academic services, should be a central location for noneducational services. An example of schools as a center of community services is demonstrated in some AMERICA 2000 schools, which highlight local communities as the heart of educational reform efforts (U.S. Department of Education, 1991).

Types of Collaborative School-Linked Programs

Many different types of collaborative school-linked programs have been yinitiated and targeted toward the needs of at-risk students (Levy & Shepardson, 1992; Temple University Center for Research in Human Development and Education, 1990). The types of collaboratives currently being implemented include those directed at parents of young children, teenage parents, pregnant teenagers, dropouts, homeless children, and alcohol and drug abusers. According to Levy and Shepardson (1992), there is no single model for collaborative school-linked services. Rather, experience shows that collaborative programs emerge out of the needs of children and families in local communities. They described collaborative school-linked services in terms of the goals of the effort, the services offered, the location of services, and the parties responsible for providing the services. Another common characteristic of collaborative programs is the provision of curriculum, services, or both.

Collaborative school-linked programs can be curriculum-based, service-based, or both. Curriculum-based programs provide knowledge to recipients. For example, dropout programs may provide remedial instruction in basic skills, while teenage pregnancy prevention programs may provide information on conception, contraception, and pregnancy. Other examples of curriculum-based collaboratives include programs that teach new mothers and fathers about their children's developmental stages, supply information on the effects of drug use, or provide educational activities for preschool children. Still other curriculum-based programs devote time not only to providing information but to teaching new skills. One example is the drug prevention program that not only provides knowledge about the effects of drug use, but also teaches refusal and coping skills. Programs to increase the employability of graduating students may provide information on how to use the newspaper to find job listings and teach new communication skills that can be valuable in interviews. Classes that teach new parents skills in disciplining children and providing a stimulating and supportive home environment also exemplify this approach.

Some collaborative school-linked services rely on the provision of a range of services to meet the needs of the targeted clientele. For example, some collaborative programs extend health and mental

health care, recreation, housing, day care, substance abuse treatment, transportation to appointments, and other services. Collaborators in these programs also vary. Some of the earliest modern collaborative programs were those in which parents became more actively involved in their children's education. These parent involvement programs brought teachers and parents together to improve the academic achievement of children. Other collaborative programs involved health care workers, social workers, psychologists, university researchers, businesspeople, community volunteers, and peers.

Levels of Collaboration

Collaboration can occur at different levels of the agencies and schools involved. Bruner (1991) identified four levels of collaboration. The first level describes interagency collaboration at the administrative level, often at top managerial levels in state and local governments. This level of collaboration often results in the creation of task forces, coordinating councils, changes in staff organization, or incentives and job evaluation systems to promote interagency collaboration. The second level of collaboration involves giving incentives to service delivery workers for working jointly with staff in other agencies. At this level, service workers develop a knowledge base about other resources in the community that can be used to meet the needs of clients. The third level of collaboration involves changes within a single agency. At this level, service workers are encouraged to help clients by going beyond procedures and rigidly applied rules. New policies are established that allow service workers and their supervisors to interact collegially and handle individual cases in ways that promote a balance of responsibility and authority. This increases the capacity of service workers to collaborate successfully with clients and invoke a more diverse range of services than typically available. The fourth level of collaboration exists between the client or family and service workers. In this type of collaboration, the service worker and the client work jointly to identify needs and set goals in order to increase the self-sufficiency of the client. This level of collaboration often requires creative problem solving and cannot be accomplished in rigidly bureaucratic systems.

Bruner's (1991) four levels of collaboration apply to schools and social-welfare, juvenile justice, mental health, and community services. Although collaboration often occurs first at the top management level or at the fourth level reflecting worker-client relationships, it can begin at any of the levels. As reported by Levy and Copple (1989), many top-level initiatives are currently promoting statewide collaborations. Findings from a systematic review of 55 collaborative programs reflecting the fourth level of collaboration between children, parents, peers, social service workers, schools, and health care agencies are discussed in the next section.

AN ANALYSIS OF EXTANT PROGRAMS

The Literature Search

A description of the library search and the selection criteria used to identify the final corpus of 55 sources included in the current review is presented below. The coding procedure that was applied to each source is described, and some general characteristics of the final set of 55 sources are presented. The limitations of the review are also identified.

The authors used several search strategies to identify the studies of collaborative programs analyzed here. A search was made of relevant professional journals in education, public health, public policy, and social services, including those geared toward professionals such as school nurses and social workers, as well as those oriented toward researchers. Particularly helpful was the article entitled "Evaluation of School-Linked Services" (Gomby & Larson, 1992), which identified 16 current collaborative programs. In addition, a search of the Educational Resource Information Clearinghouse (ERIC) yielded hundreds of reports. The 1992 annual program of the American Educational Research Association (AERA) was also examined, and relevant conference papers were secured. Finally, 45 different organizations were contacted, including state and local agencies as well as project staffs (see Table 1). These efforts resulted in the identification of a number of "fugitive" documents that were available only from the agency sources and are not yet available in libraries. The authors analyzed these reports and articles further to ensure that the programs were collaborations and that the reports contained evaluative information.

Criteria Used for Source Selection

A few basic criteria were used for the selection of sources for this study. All sources had to present results from programs involving school-based collaboration. In any single program, the school could be involved as the provider of academic services, the central location where families access social and health services, or the goal of the program (i.e., readiness programs prepare children for success in school). The programs selected addressed the needs of students from preschool to high school. Although some collaborative programs included college students, none focusing on college students was selected for this paper. Collaboration or integration among institutions and agencies was a primary aspect of programs selected. All the programs were designed to impact the lives of children or their families; were implemented in the past decade; and contained an outcome-based evaluation or some measurement of short-term, intermediate, or long-term results. Some evaluations contained process or implementation

data, but process data was not required for a study or evaluation to be included. Although results from meta-analyses and quantitative reports were included in this paper, no secondary analyses were used.

Coding Features of the Sources

Table 2 details the 10 kinds of information used for coding each source and the studies and programs described in each source. Because this investigation included journals aimed at practitioners and researchers, the types of sources included narrative reviews, interventions, program evaluations, meta-analyses, and correlational studies.

First, the type of source (e.g., narrative review, program evaluation) was coded, and limitations, such as very small sample size, lack of a control group, or poor instrumentation, were noted. The term "methodological limitations" was applied to sources that exhibited these problems. Sample size refers to the total number of clients or program sites in the treatment and control groups. For meta-analyses and quantitative syntheses, the sample size refers to the number of studies analyzed. The characteristics of the sample were also coded. That is, the at-risk population served by each program was identified. Program goals and outcomes were recorded for each study. Goals were not inferred, although unintended outcomes were recorded when relevant. The collaborator category describes the partners in the program being evaluated or described.

Evidence reported was categorized as numerical (including frequencies, percentages, means, and standard deviations), statistical (including hypothesis and significance testing), or qualitative (including anecdotes, client statements, or administrator perceptions). Data collection tools were recorded, including all methods of gathering information, such as school records, interviews, performance tests, achievement tests, and others. In the case of meta-analyses and quantitative syntheses, the data collection tools category includes all means used by the various studies cited. Cost data from the studies were broken down into three categories: none, minimal, and cost-effectiveness or cost-benefit analysis. When only a budget or program costs were mentioned in a report, that information was coded as minimal. The final category, curriculum-based versus services, describes whether the collaborative program provided education, services, or both to its clients. Examples of curriculum-based and service-based approaches to meeting client needs are presented in Table 2. If information was not available for one or several of the categories to be coded, then the notation "not stated" was entered on the coding form.

General Characteristics of the Final Corpus of 55 Sources

The sources used in this review contain articles from journals, ERIC documents, AERA papers, and program evaluations, all published since 1983. The 55 sources identified were then divided into six categories: parent education, school readiness, and life skills; teen pregnancy prevention and parenting; dropout prevention; alcohol and drug prevention and abuse; integrated services (programs designed to integrate services from a variety of different agencies and address multiple risk factors); and parent involvement. Many of the 55 sources contained descriptions and evaluations of more than one collaborative program. In those cases where enough information was available, each of the programs cited was included in the analysis. In the case of meta-analyses, however, no such attempt was made to separate out information from each of the studies cited. Six types of data sources comprised the final corpus (see Table 3).

Limitations of the Search Procedure

The literature describing collaborative programs is vast, and much of it is composed of internal documents that are difficult to obtain. This review examined primarily published studies and, thus, is subject to the biases of such papers. The primary limitation of published papers is that they tend to report positive and significant findings. However, some "fugitive" documents were obtained; their results, like those reported in published journal articles, were largely positive. Thus, this paper reports findings that are largely representative of what is known about the effectiveness of collaborative programs.

Of greater concern is the lack of information available on the magnitude of effects. This paper provides convincing evidence on the direction of outcomes, but not on the magnitude of effects.

Results within Programmatic Areas

The results from the present review are organized under six programmatic areas. For each area, an overview of programs is presented, the type of research design and evidence collected is described, and results are highlighted. Finally, a summary of outcomes across the six programmatic areas is presented.

Parent Education, School Readiness, and Life Skills Collaborative Programs

The effectiveness of parent education, school readiness, and life skills programs has received attention since the 1960s when Head Start programs were regarded as a means of opening up the opportunity system and educating poor preschool children. As Head Start, parent-child centers, and other

early intervention programs were implemented, social scientists were advocating the design of intervention studies and the use of social science methods to evaluate their effectiveness (Hewett, 1982). Of the six programmatic areas, parent education, school readiness, and life skills is the most thoroughly evaluated and researched (see Table 4).

Overview of Programs

In the past, collaborative school-linked service programs designed to enhance parent education, school readiness, and life skills have had program goals that focused on improving low-income parents' ability to promote the skills and habits of their young children, thus helping the children compete in large, middle-class environments. More recently, these programs have activated community resources to improve family conditions, parental competencies, and maternal behaviors that can contribute to the child's and family's healthy development. Most of the programs articulate goals that focus on family literacy, children's academic achievement, and the provision of health and social services to families. The recipients of these services tend to be low-income parents who have young children and little education and are living in urban areas. Some of these programs are directed, in particular, at teenage parents.

The collaborators involved in these programs include schools; social and health care workers; and, occasionally, private foundations, universities, and churches. Typically, these programs provide a combination of curriculum-based information and health and social services. The types of curriculum provided include information for parents on developmentally appropriate activities for their children, child-rearing practices, and self-help programs to develop parents' and children's literacy skills. The services most typically delivered include home visits by nurses and social workers, transportation to appointments for families, counseling, health screenings, and, occasionally, access to a parent resource center. Of the 18 programs described in this programmatic area, 16 of these programs were found to provide a combination of curriculum-based information and services.

Research Design and Evidence Collected

Eight sources were examined in this programmatic area. These eight sources reviewed results from 18 programs. .The 18 programs included 10 program evaluations; a narrative review that summarized six interventions; an intervention study; and a narrative description of a single program. Of the 18 programs reviewed, 11 employed control groups, and 11 collected more than one wave of data. Also, within the 18 programs, 13 conducted statistical tests of their outcomes. All but three of the programs reported percentages and other numerical indices, including means and frequencies.

There was a wide range of data collected in these programs, including maternal interviews, maternal self-report measures, videotaped observations of mother-child interactions, measures of attachment, measures of ego development, maternal and child intelligence tests, medical records, anecdotal reports, assessments of the home environment, records of community resource use, and birth weights of infants. In general, the paper-pencil measures used were published instruments with established reliability and validity. Although it is commonly acknowledged that implementation of collaborative school-linked programs of this type is costly, the published accounts fail to address this issue. None presented any cost data associated with the implementation of a given program.

Results

High rates of attrition were reported in many of the 18 programs reviewed. Results from the programs suggest that there were often program-favoring effects on maternal behaviors and mother-child interactions, while the effects on infant development were more modest. There were also program-favoring effects on the use of community resources and parental participation in job training and employment. However, there were more mixed effects on parental teaching skills; some programs were more successful than others, depending on the amount of time that was spent focusing on maternal interactions and other specific behaviors. Overall, however, the programs included in the present review tended to show success in influencing the outcome domains closest to their emphases, for example, children's readiness for school, parenting skills, maternal development, and use of community resources. The long-term effects of these programs are more equivocal. Some earlier evaluations of preschool programs, such as Head Start, showed that children's academic advantages fade over time, but social and behavioral effects, such as incidence of retention, special education placement, and remaining in school, support the effectiveness of these programs (Lazar, Darlington, Murray, Royce, & Snipper, 1982).

Teen Pregnancy and Parenting Collaborative Programs

During the past two decades, interest in adolescent parents, particularly teenage mothers, has greatly increased. Some teenage parenting programs have been around for as long as 20 years, but formal evaluations are rarely available. There have been few efforts to evaluate the immediate, intermediate, or long-term effects of these programs (Roosa, 1986).

Of the six programmatic areas, teen pregnancy and parenting collaboratives have received the least attention from the research community. Only six sources were identified, and they describe seven collaborative programs. Five of the seven programs focus on teen parenting and only two on teenage pregnancy prevention programs (see Table 5).

Overview of Programs

Teenage pregnancy prevention programs typically have two goals: (a) to provide information about birth control, sexuality, and pregnancy to teenagers in order to prevent pregnancies; and (b) to provide contraceptives. On the other hand, teenage parenting programs often have three goals: (a) to provide knowledge about pregnancy and birth control, as well as information on child development and parenting skills to teenage mothers; (b) to promote the mother's completion of her high school education; and (c) to promote increased employability and job skills for teenage mothers.

Teenage parenting programs are targeted for teenage mothers, particularly first-time, unmarried, low-income, pregnant teenagers. Teenage pregnancy prevention programs are targeted at the more general population of young women who are of childbearing age. Occasionally, prevention programs have been designed for particular ethnic minorities, such as African-American teenagers living in urban areas.

The collaborators involved in teen pregnancy and parenting programs are diverse. Usually, schools, home nurses, Planned Parenthood, and other health and human services agencies are involved in prevention programs. In the programs designed for pregnant teenagers, there may be obstetricians, midwives, pediatricians, and nutritionists involved. Less frequently, departments of pediatrics and of gynecology and obstetrics from university medical schools participate.

Teen pregnancy prevention and parenting programs usually provide curriculum-based information and services to their teenage clients. The pregnancy prevention programs often develop a curriculum that provides information on birth control, sexuality, and family life education. Services to these students might include counseling, medical examinations, and contraceptives. The curriculum provided to pregnant teenagers who will soon be parents addresses not only issues of birth control and sexuality, but

also provides information on child care such as child development and health education. Topics such as prenatal care and job training are also popular. The services made available to pregnant teenagers include prenatal care, transportation to medical appointments, nurse home visitations (both pre- and postpartum), medical examinations, well-child care, and developmental screening of children. Of the five teen parenting programs, four provided both curriculum-based information and services to clients; the fifth program provided services only. Of the two teenage pregnancy prevention programs, one provided both services and curriculum-based information, and the other provided only curriculum-based information.

Research Design and Evidence Collected

The six sources summarized in this programmatic area include two narrative reviews and four intervention studies. Of the seven programs reviewed, six were evaluated using a control group for comparative purposes. Three of the seven programs had a longitudinal design.

The data collection tools used were primarily interviews, self-reports, pre- and post-knowledge tests, and school records. Occasionally, measures of student attitude and maternal IQ were used. Three of the seven programs employed statistical tests; the remaining four programs made use only of numerical data, including percentages, means, and frequencies; and one of these programs reported some qualitative results. No cost information was reported.

Results

Results from the teen parenting programs reveal that clients' knowledge about pregnancy, reproduction, and birth control increased. One program showed evidence of a decreased willingness to engage in sexual activity at a young age. Most of these programs did not examine client attitudes toward the risk of additional pregnancies. Of the three programs that examined school retention of pregnant teenagers, all showed positive effects for immediate retention after the child's birth. One program examined the retention of students 46 months after delivery. These results revealed that the clients displayed a dropout rate comparable to that of pregnant teenagers who had not been enrolled in the program. These programs also provided evidence of increased concern about employment and, in some cases, decreased job turnover among the teenage parents. Two of the five programs for teenage parents that examined pregnancy rates showed a decline. In the two pregnancy prevention programs, results indicated that participating in the program delayed the age of first intercourse, decreased pregnancy rates, and increased the use of birth control clinics and contraception.

Dropout Prevention Collaborative Programs

The national dropout rate has been decreasing and may be at an all time historic low (Wehlage, Rutter, Smith, Lesko, & Fernandez, 1989). While decreasing overall, local dropout rates are not uniformly low; in particular, dropout rates in urban areas remain high. The high dropout rate in urban areas has focused attention on the design of innovative programs to meet the needs of urban students at risk for dropping out. Although there have been several studies of dropout prevention programs, few have carefully evaluated the collaborative components involved. In this programmatic area, nine sources were identified. The nine sources included in Table 6 represent results from 25 collaborative programs.

Overview of Programs

Dropout prevention programs all strive to increase students' attendance and reduce their dropping out. Most also strive to increase students' academic performance and increase their probability of attending college or entering the work force. Some of the programs targeted at delinquent and truant students with histories of noncompliant behaviors set goals to increase socially desirable behaviors. One program included was designed for the purpose of identifying and contacting truant students and students who had dropped out.

The at-risk population tends to be minority high school students in urban areas with a history of high absenteeism and course failure. The innovative programs described in the book by Wehlage et al. (1989) serve a more general population of students who are not able to conform to school expectations, as well as urban, at-risk students. Not surprisingly, there were high rates of attrition in all programs. Dropout programs tend to involve schools, parents, businesses, and departments of family and child services as collaborators and, occasionally, university and college collaborators as well. Programs targeted for more serious offenders may include the juvenile justice department.

Dropout programs often serve clients with several problems in addition to dropping out of school. For example, some of these students are involved in criminal activity, alcohol and drug abuse, or teenage pregnancy. Because of the complexity of the problems, collaborators may include drug counselors or obstetricians and other professionals providing specialized services.

Of the 25 programs reviewed, 20 provided both curriculum and service components; four provided curriculum-based information alone; and one program provided services only. The curriculum in dropout prevention programs typically focuses on remedial basic skills and vocational education. Services provided in dropout programs include counseling, mentoring, health services, home visits, and telephone calls to homes as a follow-up for absenteeism. Some programs provide coordination of Job

Training Partnerships Act (JTPA) placements and preparation for the general equivalency diploma (GED) as well. Others are designed specifically around the needs of children who do not conform to typical school expectations. Special curricula reflecting the needs of these students are often developed.

Research Design and Evidence Collected

The nine sources describing dropout studies include two intervention studies and seven program evaluations. There were control groups for 18 of 25 programs reviewed, including the Wehlage et al. (1989) review of 14 innovative dropout programs. Although these programs had control groups, their degree of comparability was rarely specified. Only three of the 25 programs employed longitudinal research designs. All of the 25 programs reported numerical data, including percentages, means, and frequencies. Seventeen of the 25 collaborative programs, including the 14 programs described in Wehlage et al. (1989), contained statistical tests of data. Sixteen of these programs made use of qualitative data in their reports of program effects.

The data employed included school records (absenteeism, truancy, suspensions, disciplinary referrals, and expulsions), interviews, field notes, questionnaires, and achievement tests. Dropout prevention programs, like many of the programs reviewed, provided little information on program costs; only two of the programs provided some minimal cost data.

Results

Findings from the dropout prevention programs reveal mixed effects. All but one of the programs increased students' attendance rates. Most programs increased students' grade point averages and the number of credits earned. Of the studies that examined dropout rates, a decrease was noted. Only one program assessed the effects of a prevention program on dropout rates over time, and this program indicated a continued decrease in dropout rates. Behavioral indices across all programs revealed weak effects. There was no evidence of decreased suspensions. Graduation rates, although improved, were still low, and in many schools the number of disciplinary referrals did not decrease. There was little evidence of students having more definite graduation plans as a result of participating in the programs.

The study by Wehlage et al. (1989) explored the psychological effects of dropout prevention. Their results revealed modest positive effects of the 14 programs on social bonding, sociocentric reasoning, self-esteem, locus of control, and academic self-concept. They reported that one quarter of students in the dropout programs were receiving additional social services.

Alcohol and Drug Prevention and Abuse Collaborative Programs

For the past three decades, young people, their parents, teachers, and government officials have been dealing with the problems of alcohol and drug prevention and abuse. Despite great public attention and concerted efforts to discourage alcohol and drug use, the number of youth using alcohol and drugs has increased, and the age at which they begin using these substances has decreased. Recently, a collaborative approach has been used to tackle these problems. These collaborative programs seek to go beyond merely imparting alcohol and drug information to providing young people with counseling services, drop-in centers, and peer mentors (see Table 7).

Overview of Programs

Collaborative alcohol and drug prevention and abuse programs have one overriding goal: to reduce the consumption of alcohol and drugs. Toward that main goal, many programs have a number of ancillary objectives such as increasing knowledge about drugs and alcohol, promoting skills to cope with the pressure to use these substances, teaching responsible drinking habits, and developing positive self-esteem.

Because all young people are considered to be at risk for alcohol and drug problems, the programs target a wide population. Some programs address the specific needs of urban minorities, Native Americans, and children of alcoholics. While some programs work with young people facing a number of risk factors, others work with students who might not be considered at risk for any other problems.

In almost all of these programs, schools were part of the collaboration. Unlike other collaborative efforts, however, peers play a significant role. Other collaborators include community and social agencies, the media, counselors, health care workers, police, and community members, especially leaders. Many alcohol and drug prevention programs use both curriculum and service components in designing programs. The curriculum focuses not only on information about alcohol and drugs, but on social and decision-making skills as well. Services include peer and other counseling, alcohol and drug-free activities, and support groups.

Research Design and Evidence Collected

The ten alcohol and drug abuse sources reviewed include one narrative review, six intervention studies, two program evaluation studies, and one meta-analysis. Several of these sources described results from more than one program; the meta-analysis, for example, reviewed results from 143 programs. Altogether, the results from 171 programs are represented in the ten sources.

This programmatic area has benefitted from the interest of the medical community. Many well-designed studies have been conducted and have provided evidence of effects. All of the studies included in the meta-analysis had control groups. In addition, three of the intervention programs also had control groups. A longitudinal design was employed in four of the programs reviewed (the number of longitudinal studies included in the meta-analysis was not stated). All but five of the 171 alcohol and drug abuse and prevention programs employed numerical data, including those programs summarized in the meta-analysis; 150 of the programs employed statistical tests of effects; and seven programs employed qualitative results. Three programs relied on qualitative data alone.

The range of data collection tools used in these programs included self-report surveys and inventories; questionnaires; interviews; pre- and posttests of drug knowledge; participant observations; performance tests, such as saliva or breath tests; and student records. Although these social programs are costly, none of those reviewed provided any information about the amount of funds they required.

Results

Data from these numerous programs provide evidence that students' use of drugs decreases as a result of participating in drug prevention and abuse programs. The effectiveness of these programs on alcohol use is less clear. It appears that the most effective alcohol and drug prevention programs are those that deliver knowledge about the effects of alcohol and drugs to students and also provide training in refusal and coping skills. Results of studies show that students' knowledge of the deleterious effects of alcohol and drugs increased and their problem-solving skills improved with program participation. This programmatic area is able to make use of performance tests, such as saliva and breath tests, to validate program effects. Although the number of programs represented in the meta-analysis using physiological tests was not known, there does not appear to be widespread use of physiological performance measures.

Alcohol and drug prevention and abuse programs provide one of the clearest effects regarding the value of collaboration. Based on results of a meta-analysis of 143 programs, Tobler (1986) documents the superiority of programs that involve peers as collaborators. This finding is based on a mean effect size of .35, which is a moderate effect. For the 143 drug programs synthesized in the meta-analysis, a grand mean effect size of .30 was measured over all outcome measures. The average student in the peer programs moved to the 65th percentile of all outcome measures compared to the 50th percentile for control group members. Students in other types of programs moved to the 54th percentile

compared to the control group's 50th percentile. This is a difference in percentiles of 11% between peer programs and other types of drug prevention programs.

The superior effects of peer programs reflect the special influence peers have on one another's behavior and the value of specific skills training. Regardless of the type of drug used, peer programs are successful at modifying student behavior. The Tobler (1986) meta-analysis seriously challenges the concept that knowledge changes alone will produce attitude changes and corresponding changes in behavior. It appears that alcohol and drug prevention programs that use peers as collaborators stand a better chance of decreasing student drug use--or at least retarding the likelihood that students will try new drugs.

Integrated Services Programs

Although the notion of integrated school-linked services for children enjoys great currency today, similar ideas have waxed and waned over the past 100 years. Medical screenings, inoculations, school lunches, and counseling for students are all examples of nonacademic services that have become entrenched in public schools across the United States during the past century. Current reformers view schools as potential sites for providing an even greater variety of services ranging from welfare to job training and from child care to juvenile justice services. Proponents of such integration argue that current service systems cannot respond in a timely, coordinated, or comprehensive manner to social problems. They further argue that these integrated services should be school-linked, not only because schools are often the most dominant institutions in their communities, but because linking services to schools will promote academic achievement. Table 8 presents results from nine currently implemented, integrated services programs.

Overview of Programs

As the label implies, integrated services programs have a wide variety of goals. All programs seek to coordinate services, but often toward different ends. In some cases reviewed, however, the integration of services was an end in itself. In other cases, the integration of services was an intermediate goal toward ends such as lowering dropout or teen pregnancy rates. In many cases, integrated services programs aim to meet a number of different goals on behalf of children and their families. A single program might encompass goals as diverse as providing better health care and recreation, improving school attendance and achievement, decreasing dropout rates, and making community resources available to the schools.

The integrated services programs analyzed in this paper exist in urban and rural communities, at both the local and state levels. They work to bring children and their families in contact with educational, medical, mental health, legal, employment, and other social services. A wide range of students are served by these programs. Integrated services programs, for example, have been targeted at delinquent children, children from dysfunctional homes, urban minorities, and low-achieving youth.

The list of collaborators in these programs is as great as the variety of services provided. With schools serving as the nexus, the collaborators include universities, businesses, state and local governments, foundations and nonprofit agencies, health care providers, mental health agencies, community and religious institutions, parents, and peers.

While curricular elements, including knowledge and skills curricula, were common in many of these programs, none of them focused on curriculum exclusively. Of the nine integrated services programs analyzed here, two had only service components, while the remaining seven contained both curriculum and services. Services include vocational counseling, health care, a wide variety of social services, and case management.

Research Design and Evidence Collected

The nine sources in this programmatic area include one intervention study and eight program evaluation studies. Four of these nine programs had control groups, and seven employed a longitudinal design. Seven reported results using numerical information such as percentages, means, and frequencies. Only one reported results using statistical tests. Six of the programs included qualitative data. Two of the programs were described using qualitative data alone.

The types of data collected include school records; teacher and student attitude measures; student self-reports; classroom climate measures; achievement tests; and interviews of students, teachers, and student personnel. Cost data were reported more frequently in this programmatic area than in any other. Five of the nine programs included some minimal information about costs. Often, the cost data provided only included a single dollar amount that represented the cost of running the program for one year. Occasionally, a program budget was included in the evaluation reports.

Results

Outcomes from the programs were diverse. Some programs included institutional changes as evidence of program success. Most of the programs measured success using student outcomes such as grades, attendance, student attitudes, and evidence of noncompliant behavior. Other sources of evidence

included degree of parental involvement, teacher attitudes, number of services provided to clients, and number of referrals. Outcomes used to measure effectiveness are frequently measured differently, even among sites of the same project. For example, average daily attendance is measured several different ways by the 35 local sites in the Cities in Schools program (Cities in Schools, 1992).

The evaluation reports that record the effects of these programs frequently contain information describing the evolution of institutional change. Some of these reports, for example, contain descriptions of linkages among existing institutions, joint planning and budgeting sessions, the creation of management information systems, hiring of case managers, and the forming of business-school compacts.

In these evaluation reports, quantitative results of program effectiveness were typically reported as frequencies, percentages and means, and standard deviations. Because these programs were often locally designed and frequently made use of unique outcome measures, it is difficult to form generalizations about their effectiveness. Based on the integrated programs examined here, however, several conclusions can be drawn. Integrated services programs have positive effects on students' achievement tests, grades, dropout rates, and attendance. There is some evidence, based on two program evaluations, that integrated services can reduce the incidence of teenage pregnancy and delinquent acts.

Because many of these programs are relatively new, it is impossible to measure their long-term effects. Their immediate and short-term effects, however, have been examined. The number of children and families receiving services with increased accessibility should be among the most important outcomes considered. All of the nine programs show large numbers of services being provided to at-risk children and their families. A second important outcome, which is rarely reported, is the effect of these programs on teachers. In the Jewish Family and Children's Services (1991) project, teachers reported that their knowledge of child development and sense of responsibility toward the children increased with program implementation. The evaluation conducted by Philliber Research Associates (1991), moreover, suggested that children who receive intensive case management exhibited higher academic achievement and better work habits despite increased absenteeism.

Many of the evaluations of integrated services have limited internal validity. For example, the control groups, when present, were not shown to be comparable, and the programs often had high rates of attrition. Outcomes were locally defined, and many evaluations did not collect several waves of data. In order to get a fair appraisal of the value of collaborative activities, these methodological problems must be corrected. In addition, it is essential to have sufficient cost data available so that cost-effectiveness and cost-benefit analyses can be conducted.

Parent Involvement Collaborative Programs

The idea of parental involvement in children's education is not a new one. At the turn of the century, Frederick Froebel, one of the founders of the American kindergarten movement, argued that schools should involve parents in the education of their children. Since that time, parental involvement has enjoyed consistent support as a worthy idea (White, Taylor, & Moss, 1992). Such involvement encompasses a wide array of collaboration, however. Parental involvement can include partnerships between families and schools, encouraging parents to play a role in their children's physical and emotional development, and teaching effective parenting and child-rearing skills. All of the parent involvement programs reviewed here focused on family-school partnerships (see Table 9).

Overview of Programs

School programs to improve parental involvement have not only aimed to foster greater parental concern for children's educational achievement. Typically, they have also set goals of improving students' academic performance in school and creating or improving ways for parents to have input in their children's education. In addition, not all goals are school-based. Many programs aim to empower parents, create a more intellectually and educationally stimulating home environment, and promote closer family relations.

Collaborative programs to foster parental involvement have worked with the families of children in preschool through high school. The programs described here primarily involve preschoolers and primary school students. Fewer programs involving older elementary and middle school students and their families are represented. Although many parent involvement programs are popular in rural and suburban schools and with middle-class and majority populations, the programs analyzed in this paper operated primarily in urban areas for disadvantaged, at-risk minority populations.

Schools and parents are the obvious collaborators in any parent involvement program. Some programs, however, also involve the wider community or provide support, including psychological and social services. Other parent involvement programs have brought businesses, media, and universities into collaboration with schools and parents. Although parent involvement programs sometimes provide a combination of services and curriculum-based information, the preponderance of interventions are curricular. Excluding those programs reviewed in the two meta-analyses, none of the programs analyzed in this section provided services only. Two provided a combination of curriculum and services, and the remaining one utilized curriculum only.

Research Design and Evidence Collected

The eight sources reviewed in this programmatic area represent results from over 240 parent involvement programs. The two meta-analyses included here--Graue, Weinstein, & Walberg (1983) and White et al. (1992)--synthesized results from over 230 programs. (Graue, Weinstein, and Walberg (1983) summarized results from 29 programs and White et al. (1992) from over 200 programs.) The remaining six sources reviewed included four program evaluations, one correlational research study, and one intervention study.

Both meta-analyses reviewed results of parent involvement programs that were compared with control groups, although the comparability of the experimental and control groups was not known. Two of the four program evaluations employed control groups; the remaining sources did not. From the data presented, it was impossible to determine how many, if any, of the 29 studies in Graue et al. (1983) and the over 200 studies in White et al. (1992) contained longitudinal data. Both meta-analyses did, however, take into account the internal and external validity of the studies reviewed. Of the remaining six sources, two of the program evaluations and the correlational research study collected longitudinal data. All of the program descriptions contained numerical data; only two of the programs did not report statistical tests; and approximately 11 programs were described using qualitative data.

The types of data collected included school records of attendance and grades, pre- and post-standardized achievement tests, surveys of attitudes, memory and perception tests, study skills tests, observations, interviews, records of parent training sessions, and agency logs. Three of the eight sources on parent involvement included minimal cost data, describing either total costs or average annual costs of programs. As part of the White et al. (1992) meta-analysis, the authors reviewed 20 programs cited by prominent reviewers in support of parental involvement; 18 of these programs analyzed costs. Such analysis of program costs was rare among the 55 sources reviewed for this paper.

Results

Results from the studies suggest that parent involvement programs have weak to moderate positive effects on improving children's academic performance. Although these programs improved parental involvement in children's education and led many parents to believe that school climate had improved; however, changes in academic achievement were mixed. Results from one program evaluation and the correlational research study indicated that students' reading scores improved, while their mathematics scores remained unchanged, after greater parental involvement. Another program demonstrated gains in students' art and social studies knowledge. A fourth program reported improved student achievement.

Employing effect sizes to judge the magnitude of program outcomes, the two meta-analyses cited here provide conflicting evidence about the effects of parent involvement programs. Using a set of 29 studies, Graue et al. (1983) found that programs to improve parent involvement and home environment in elementary school have large effects on children's academic learning. On the other hand, employing over 200 studies of early intervention programs for preschoolers, White et al. (1992) concluded that "average effect sizes of treatment versus no-treatment studies in which parents are involved are about the same as the average effect sizes of treatment versus no-treatment studies in which parents are not involved." (p. 118) Based on these findings, they concluded that there is no basis for parent involvement programs to claim cost-effectiveness. Possible reasons for this lack of effect include poor implementation of programs and failure to look at outcomes for families. If parent involvement is advocated because it is "a good thing" or because parents have an obligation to be involved, then these findings are irrelevant. Those hoping to achieve goals like better student performance and attendance, however, may want to consider other avenues toward those ends.

SUMMARY OF OUTCOMES

This paper provides an analysis of the design and effects of school-linked health and human services programs that involve collaborations. Overall, the outcomes of these programs are positive (see Table 10). Of the 176 outcomes, 140 (or 80%) are positive; 29 (or 16%) provide no evidence of change; and 7 (or 4%) are negative. These results provide evidence of the value of collaborative programs. Although these results seem robust, they must be treated with guarded optimism. Table 10 does not reflect the magnitude of the outcomes summarized. Many of the 55 sources did not specify the magnitude of the outcomes; and, thus, only the direction of outcomes could be reported in this paper. The positive outcomes summarized include those that reflect small, insignificant improvements and outcomes that measure large, statistically significant effects. Negative outcomes also include small and large effects.

Table 10 contains only selected outcomes reported in the 55 sources. Five of the six outcomes included are those that were commonly used in the six programmatic areas. These five outcomes include: (a) attendance; (b) achievement, grade point average, and academic grades; (c) reduced behavioral problems; (d) self-esteem; and (e) dropouts. They measure the impact of programs on children's lives.

The outcome in Table 10 labeled "special emphasis" represents the main focus of each programmatic area. For example, the special emphasis of dropout prevention programs is the reduction of dropout rates. The special emphasis of teen pregnancy prevention and parenting programs includes a decrease in the number of pregnancies, delayed onset of sexual activity, and an increase in teen

parenting skills. The special emphasis of integrated services programs is the provision of school-linked services to students and their families. Thus, the outcomes summarized in the "special emphasis" column reflect whether the key program goals for each of the six programmatic areas have been accomplished.

Summary of Outcomes by Programmatic Area

All of the six programmatic areas summarized in Table 10 produce largely positive outcomes. The programmatic area with the highest percentage of positive outcomes is integrated services (95%). Parent involvement programs had the fewest positive outcomes (68%). Even if 68% is the lowest percentage of positive outcomes among the six programmatic areas, this percentage still provides empirical evidence of the efficacy of parent involvement programs.

Table 10 provides information on which programmatic areas have been evaluated using a variety of outcomes. The distribution of outcomes within each programmatic area reveals that the teen pregnancy and parenting programs included in this corpus of studies have not collected data on the more common outcomes. Many of the outcomes for teen pregnancy prevention and parenting programs are measured by changes in knowledge of contraception, reproduction, and pregnancy. The alcohol and drug prevention and abuse programs also measure changes in knowledge. They seek to increase students' knowledge about the effects of drugs. Both teen pregnancy prevention and parenting programs and alcohol and drug prevention and abuse programs often try to develop students' refusal and coping skills. These cognitive and affective outcomes are unique to particular programmatic areas and are not represented in Table 10; instead, they are presented in the text describing the specific programmatic area.

Some programmatic areas have been evaluated using diverse student outcomes and can provide policymakers with a wide array of information about the effects of these programs. For example, parent education, school readiness, and life skills programs have been evaluated using a variety of outcome measures. Although the outcomes in Table 10 were selected because they were commonly used in evaluations, the sparse appearance of the table provides evidence that even these core outcomes are not well represented. Results presented in this paper suggest that collaborative programs need to be evaluated using the core of common outcomes identified in Table 10 in combination with unique outcome measures. Expanding the criteria used to judge collaborative programs is desirable because it increases the likelihood of evaluators detecting unintended program outcomes.

Types of Outcomes Measured

The five types of outcomes commonly used in evaluations of collaboratives (attendance; achievement, grade point average, and academic grades; reduced behavioral problems; self-esteem; and dropouts) reveal largely positive results. There was no category of outcomes that revealed less than 76% positive effects. These results suggest that collaborative programs do have a positive impact on students' cognition, affect, and behavior. These outcomes tap not only results from paper-pencil tests, but also include behavioral measures such as attendance, dropout rates, and counts of behavioral problems, such as expulsions and suspensions. The combination of paper-pencil and behavioral measures increases the internal validity of the results obtained.

Attainment of Program Goals

The outcomes summarized in the special emphasis category are also positive (77%). The special emphasis results provide evidence that the collaborative programs largely achieve the goals they set forth. However, the magnitude of the effects they achieved is not documented. Although these program produce positive results, the size of the effects may be neither statistically nor practically significant. Therefore, the results presented in this paper must be regarded with cautious optimism. Better documentation of results is required to conclusively determine the value of collaborative school-linked services.

Some Methodological Concerns

It is difficult to establish the generalizability of the findings because many studies of collaborative programs are plagued with methodological problems, including high attrition, control groups that may not be comparable, and a wide range of unique outcomes, some of which are based on measures of unknown reliability and validity. Most of the descriptions of programs did not contain adequate information on implementation. In addition, many did not report the magnitude of program effects nor include information on costs, making it difficult to judge the practical significance of the programs.

Research on school-linked service programs that require multi-agency collaboration suffers from several methodological limitations. Several elements contribute to findings of limited value for solving the complex problems described in this paper. They include the varied (and sometimes conflicting) goals, assumptions, definitions, procedures, and analytic tools used in the design and evaluation of collaborative programs; narrowly framed research questions generated by researchers from different disciplines; and

a service delivery perspective contributed by social and health care agencies. These problems are further exacerbated by the lack of good data on implementation.

Innovative programs are designed and implemented to achieve specific outcomes. It is vital, especially during initial implementation of a new program, to provide adequate resources to determine whether and to what degree project objectives are achieved. Systematic documentation and evaluation of the program's implementation and evaluation are central to the validation and refinement of innovative programs. Beyond that, they can contribute significantly to data on the design, planning, and implementation process associated with such programs.

It is generally recognized that use of the traditional "treatment/yield" paradigm within classical experimental designs is a necessary, but not sufficient, condition to understand how and why innovative programs work. The classical pre- and posttest control group experimental designs, while useful from a conclusion-oriented evaluation research perspective, are not sufficient to address such process evaluation questions as: What elements of the program need to be implemented (and at what levels) to make the program work? What are the critical features of the programs that should be observed to validate program implementation? Evaluating the "collaborativeness" of these programs posts a major challenge.

Information is needed to further the understanding of what constitutes effectiveness and the conditions that influence it. School-linked service integration programs such as those reviewed in this paper represent a major step forward in improving the chances of learning success for children and youth in at-risk circumstances, including those living in inner-city communities. However, as with most reform efforts with broad agendas, these programs are faced with many, and often competing, demands. Strategic planning, responsible implementation, and, above all, practical wisdom are required as the many dimensions of the program unfold.

CONCLUSION

Innovative programs evolve in stages of development, growth, and change. Procedures found useful in one city can be helpful to others who are initiating similar programs elsewhere. Strong efforts are needed to encourage exploration, to share ideas on solutions to thorny problems, to identify promising practices, to analyze how programs are implemented, and to evaluate outcomes. There has been insufficient opportunity for persons involved with research and implementation of school-linked service integration programs to share understandings and discuss research questions and methodological considerations. This is yet another level of collaboration that will contribute to sustained improvements.

The research and evaluation will yield a much-needed knowledge base on how to provide school-linked service integration that is both feasible and effective.

Evaluating collaborative school-linked health and human services remains a challenge. Direct measures of the "collaboration" are sorely lacking. Data are needed, for example, on the accessibility of programs; the implementation processes that established the programs; the role of the principals and others in leadership positions of the various service agencies; the changing role and modus operandi of the staff; the ways in which agency staff are involved in the planning, implementation, and evaluation of the programs; and the allocation and budgeting of the cost of the services. Kirst and Kelley (1992) concluded that the educational accountability system must be altered to include outcomes that validly measure school-linked services. They suggested that in evaluating collaborative programs, outcomes must be selected that go beyond paper-pencil test scores. Educators must acknowledge the close linkage between the provision of school-linked services and academic outcomes. School-linked services should not be perceived as peripheral to the academic mission of schools, but rather as an essential component that can reduce the vulnerability of at-risk students and their families.

Data bases derived from program evaluations that focus on processes and outcomes discussed above can be expected to provide information on the technical aspect of initiating and maintaining school-linked service integration programs, as well as on methods for improving implementation research and evaluation. Information is needed to further the understanding of what constitutes effectiveness and the conditions that influence it.

A variety of innovative collaborative school-linked programs are being created across the country as an alternative to more effectively meet the educational and related service needs of children and families. A central concern of these programs is how educators and people in various organizations can enhance one another's efforts to improve the prospects of schooling success of children and youth from families in at-risk circumstances. Agencies of the community that badly need to coordinate efforts in service to people of the city are fractionated, uncoordinated, and disparate. Schools are part of this much disconnected nonsystem.

One common underlying premise of the emerging "school-community connection" types of programs is that the challenges facing children and families stem from a variety of cultural, economic, political, and health problems. Their solutions are by nature complex. They require the pooling of resources from public and private sector agencies such as city and state health and human services departments, businesses, religious institutions, and community-based social and medical service agencies.

They also require negotiation of new forms of cooperation and coordination and new ways of mobilizing the energies and resources of communities.

Another commonly shared assumption in the design and implementation of the various approaches to providing coordinated school-linked health and human services delivery is that narrow plans and commitments just to schools will not suffice to solve the growing problems that must be addressed to ensure learning success of the many children and youth who have not fared well under the current systems. The challenge is to understand the problems and resources that can be drawn and mobilized thoroughly; to help raise consciousness about the opportunities in the community, especially among those who are in a position to shape policies; and to provide resources to improve the prospect of learning success for children and youth in at-risk situations, such as those in the nation's inner-city communities.

Despite the fact that the research base and practical know-how in implementing school-community connection programs require application of knowledge and expertise from many disciplines and professions, no system is in place to communicate and share the growing body of related research findings and innovative developments among practitioners of the various fields and others who play major roles in influencing the conditions and process of education and health and human services delivery. Kirst and Kelley (1992) described operational strategies and tactics that support collaborative school-linked services. They called for significant changes at all levels of school personnel, including district leadership, middle management, principals, and teachers. Policymakers, on-line professionals in schools, and the various service delivery agencies have limited means to access a vast amount of available information about program features and their implementation at various locations. Even for those who may have access to information generated by the multiple disciplines and professions, they are perplexed about how to systematically link the information on the varied levels of service delivery to their site-specific needs and current operations.

Despite the obvious historic and current appeal of collaborative school-linked programs, the evidence of their effectiveness is slimmer than required for a confident overall evaluation. To be sure, several programs have been adequately evaluated and show some positive effects on outcomes. Still, the evaluations that are made public may tend to be the ones with more positive results. Many reports merely describe programs and provide rudimentary information that affords little basis for recommending such programs in general and still less on the decisive features of successful programs. Although trite, it must be acknowledged that much more research and much more rigorous research designs will be necessary to arrive at general policy conclusions.

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Gutelius Child Health Supervision Study
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Table 1
Agencies, Organizations, and Projects Contacted*

Name	Location
Boston University, Center on Families, Communities, Schools, and Children's Learning	Boston, MA
Brown-Campione Research Group	CA
California State Department of Education, Healthy Start	Sacramento, CA
California Tomorrow	San Francisco, CA
Annie E. Casey Foundation	NJ
Cities in Schools	Alexandria, VA
Clearinghouse on Educational Management	Eugene, OR
Columbia University, Center for Children in Poverty	New York, NY
Columbia University, National Resource Center on Service Integration	New York, NY
Columbia University, School of Social Work	New York, NY
EdSource	Menlo Park, CA
Education and Human Services Consortium	Washington, DC
Family Resource Centers	CO and CT
Family Resource Coalition	Chicago, IL
Family Resource and Youth Services Centers	KY
Far West Laboratory	San Francisco, CA
Fresno Tomorrow, K-6 Program	Fresno, CA
W.T. Grant Foundation	San Francisco, CA
Institute for Educational Leadership	Washington, DC
Institute for Responsive Education	Boston, MA
Jewish Services	San Francisco, CA
Joining Forces (now defunct)	Washington, DC
Los Angeles Educational Partnership, Focus on Youth Program	Los Angeles, CA
Maryland State Department of Education, Maryland's Tomorrow	Annapolis, MD

Table 1 (cont'd)
Agencies, Organizations, and Projects Contacted*

Name	Location
National Clearinghouse for Alcohol and Drug Information	Washington, DC
National Council of Jewish Women	New York, NY
National Drop Out Prevention Center	Clemson, SC
New Beginnings	San Diego, CA
New Futures, Center for the Study of Social Policy	Washington, DC
Olympia Schools Project	Olympia, WA
Oregon School Study Council	Eugene, OR
The David and Lucile Packard Foundation, Center for the Future of Children	Los Altos, CA
Phillıber Research Associates	Accord, NY
Research and Training Associates	Overland Park, KS
School Based Youth Services Program	NJ
School in Communities Program	NY
Schools Partnership Project	San Francisco, CA
Southwest Regional Laboratory	Los Alamitos, CA
Stuart Foundation	San Francisco, CA
Student Service Centers	Portland, OR
Texas Education Agency	Austin, TX
United States Justice Department	Washington, DC
University of California, Graduate School of Education	Berkeley, CA
Ventura County Children's Demonstration Project	CA
Yale University, Bush Center for Child Development	New Haven, CT

* Contacted for information; not all provided evaluation or research reports.

Table 2
Category Names and Descriptions of Information Coded for Each Source

Category Name	Description of Information Coded
Author/Project	55 sources analyzed
Type of Source	Program evaluations (N=31), intervention studies (N=15), narrative reviews (N=4), meta-analyses/quantitative syntheses (N=3), narrative description of a single program (N=1), correlational research study (N=1)
Sample Size	Number of clients, sites, or programs
Characteristics of Sample	Urban/rural, minority status, income, parental education, age, poor academic performance, absenteeism, pregnancy, truancy, alcohol/tobacco/drug use and abuse
Program Goals	Stated goals of the programs only
Collaborators	Schools, parents, peers, community service agencies, businesses, universities, health care providers, day care centers, foundations and nonprofit organizations, government
Outcomes	Stated outcomes of the programs, including unintended outcomes
Evidence Reported	Numerical, statistical, and qualitative
Data Collection Tools	School records, interviews, observations, pre- and posttests and surveys, attitude measures, achievement, intelligence and developmental tests, artifacts, project logs, government records
Cost Data	None, minimal, and cost-effectiveness or cost-benefit analysis
Curriculum-based vs. Services	Curriculum includes provision of information on parenting and pregnancy, early childhood education, sex education/family life, contraception, alcohol and drug education, coping/refusing skills, self-esteem workshops, multicultural/dominant culture awareness, employability, basic skills, literacy, English as a Second Language, alternative curricula, GED. Services provided can include medical screenings and checkups, home health and social work visits, counseling and support, day care, prenatal services, telephone calls, transportation, help accessing services, and resource centers.

Table 3
Type and Number of Data Sources

Type of Source	Number of Sources
Program evaluation	31
Intervention study	15
Narrative review	4
Meta-analysis/quantitative synthesis	3
Narrative description of a single program	1
Correlational research study	1

Table 4
Features of Collaborative Parent Education, School Readiness, and Life Skills Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Services
Dolan (1992)	Intervention study with methodological limitations	24 parents 38 students	Parents with less than 5th-grade literacy levels Children with academic difficulties in urban settings	Raise literacy skills for all family members Increase parent involvement and advocacy skills Increase children's academic achievement Create an intergenerational model of literacy Intervene in the summer reading loss phenomenon	Community organization Schools	Prevented summer reading loss (+) Improved students' social behaviors (+) Improved parents' literacy (+) Improved parents' life skills (+) Improved home environment for academic achievement (+)	Standardized achievement tests School records Rating of classroom adaptation Assessment of home educational environment	Curr.-Based Self-help program Reading, math, and spelling instruction Services Counseling Tutoring Day-care for children
Halpern (1990)	Narrative research-oriented review	4 recently completed community-based early intervention studies: Parent Infant Project: N=92, treatment; N=53, control Prenatal/Early Infancy Project: N=400, distributed across 4 different interventions United Charities of Chicago: N=53, treatment; N=38, control Family Support Project: 2 different treatments, N=34 and N=46, treatment; N=137, control 3 sites of Parent-Child Development Centers: Birmingham: N=162,	Teen parents Single parents Low-income parents Ethnic minorities with parents who have low levels of education	Community-Based Early Intervention Programs Promote family conditions, parental competencies, and behaviors that contribute to maternal and infant health, maternal personal development, and healthy child development Identify and activate latent helping resources in low-income communities Parent-Child Development Centers and Child and Family Resource Program Improve low-income parents' ability to promote in young children the skills and habits needed to compete in larger middle class world Improve the likelihood that children will succeed in school Provide access to broad, multifaceted social support Improve low-income mothers' general coping skills and sense of self-efficacy and personal development	Social workers Mental health agencies Child welfare agencies Health care agencies Churches Federally funded community action agencies	Community-Based Early Intervention Programs Parent Infant Project Control infants had slightly fuller gestation periods and higher birth weights (-) Mothers with poor baseline diets were less likely to improve them (-) No program-favoring postnatal effects (0) Modest program trend at 4 months showing maternal warmth (+) Prenatal/Early Infancy Project No overall prenatal effects (0) Few overall programs favoring postnatal effects (0) Parents who only received prenatal visits and control group members had a higher incidence of child abuse and neglect than treatment parents who were visited to 24 months (+) United Charities of Chicago Spotty findings (0) Most successful treatment was the weekly discussion group of 10 mothers, who elaborated more on children's play; children used more expressive language (+) Mothers in discussion groups showed some superiority on ego maturity, future orientation, and use of community resources (+) Endorsement of risk taking and expectation that children are self-directing (+) IQ decline in both treatment and control groups (-) Family Support Project Treatment's most marked positive effects were observed in mothers who had depressive symptoms at intake (+) Treatment infants had higher developmental scores than controls (+) Parent-Child Development Centers Treatment mothers comforted children more at 24 months and refrained from verbal control at 24 and 36 months (+) In teaching situations, treatment mothers gave better instructions and praise; talked and elaborated more to children; used less criticism at 36 months; and used more positive language and play stimulation with children (+)	Parent Infant Project Maternal self-reports of depression, support, and coping skills Maternal ego maturity Maternal IQ Barnard protocol for observation of infant feeding and teaching Caldwell HOME Ainsworth Attachment Instrument Prenatal/Early Infancy Project Maternal interviews Medical records Cattell Bayley Department of Social Service records Caldwell HOME Infant height and weight United Charities of Chicago Videotaped observation of maternal leading style and child behavior Loevinger Scale of Ego Development Maternal expressed values about child rearing, achievement, and risk taking Family Support Project Center for Epidemiological Studies Depression Scale Videotaped maternal-infant interaction Ainsworth Attachment Instrument Caldwell HOME Bayley Parent-Child Development Centers Cattell	Curr.-Based Parent Infant Project Not described Prenatal/Early Infancy Project Emphasis on interpreting infant behaviors, emotional needs, and need for progressively more complex interaction United Charities of Chicago Toy demonstrations Child rearing topics Presentation of child development activities Family Support Project Demonstrating parent-child activities and basic care Services Parent Infant Project Home visits Prenatal/Early Infancy Project Nurse home visits Service brokerage United Charities of Chicago Home visits Discussion groups Family Support Project Home visits Service brokerage Provision of transportation

(+) indicates positive outcomes
(-) indicates negative outcomes
(0) indicates no change

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Table 4
Features of Collaborative Parent Education, School Readiness, and Life Skills Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Services
Halpern (1990), continued		treatment; N=89, control Houston: N=97, treatment; N=119, control New Orleans: N=67, treatment; N=59, control 5 sites of Child and Family Resource Program: 409 families: N=199, treatment; N=210, control				Treatment children scored higher on the Bayley test at 24 and 36 months (+) Treatment and control children tested at ages 8-11 showed no change in teacher-reported learning differences (0) Significantly more behavioral problems among control children (+) Treatment mothers reported more use of community resources (+) (only surveyed in one site) Treatment mothers reported greater life satisfaction (+) (only surveyed in one site) **Child and Family Resource Program** Marginally significant program- favoring effects on Parent-as-Teacher Inventory (+) At 18 months, treatment mothers showed more stimulating interaction with their children at home (+) No differences in children's health (0) No effects on parents' sense of independence (0) Significant program effects on feelings of efficacy, ability to control events, and locus of control (+) Significant program effects in percentage of mothers employed, in training, or both (37% increase in treatment, 28% increase in control) (+)	Peabody Picture Vocabulary McCarthy	
Kagan et al. (1992) Parent & Child Centers (p. 143)	Program evaluation - brief narrative	centers	Low-income families with children ages birth to 3	Provide parenting education to enhance familial interactions Provide health and social services to families	Schools Parents Social service agencies	Children in treatment scored higher on Stanford Binet at 36 months (+) Mothers showed involvement in comforting their infants (+) Mothers refrained from verbal control of their infants (+) Mothers talked more to their children (+) Mothers expressed greater life satisfaction (+) Mothers reported greater use of community resources (+)	Stanford Binet test	Curr.-Based Parenting/ child development classes Services Child care Transportation Health and social servic Saturday program
Kagan et al. (1992) Comprehensive Child Development Program (p. 145)	Program evaluation - brief narrative	Operating in 24 sites nation-wide	Poor families with children under age 1 Pregnant women	Ensure that families receive coordinated services that respond to their individual needs	Schools Universities Community- based social service agencies Health centers	No program-specific outcomes reported	Not stated	Curr.-Based Child care and early development educatic programs Services Referral to employment training, income support, and housing assistance services Health screenings Immunization Medical treatment and referrals Nutrition services

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(+) indicates positive outcomes
(-) indicates negative outcomes
[redacted]indic[redacted]o cha[redacted]

Table 4
Features of Collaborative Parent Education, School Readiness, and Life Skills Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Services
Kagan et al. (1992) Syracuse Family Development Research Project (p. 146)	Program evaluation - brief narrative	108 families	Low-income families with children ages birth to 5	Provide a daily development program and integrated services for children ages 6 months to 5 years	Schools Parents Children Social service agencies	At age 14 program girls were found to have better school attendance and grades and boys had fewer and less serious types of juvenile offenses (+) No difference in cognitive ability at age 5 (0) 1st graders developed more positive social interaction with other children (+) More negative attitudes toward teachers (-)	Not stated	Curr.-Based Development programs for children Services Home visits
Lassen & Janey (1991)	Narrative description of a single program	1 child care center	Urban, single, low-income mothers	Provide comprehensive early childhood program for children and parents	Schools Social service agencies Public housing authority Institute of higher education Private foundation Educational coalitions Parents	Improved children's performance on social/cognitive measures (+) Enabled parents to pursue educational and employment goals (+) Increased parents' self-esteem (+) Improved quality of parents' interaction with children (+)	Interviews Social and cognitive measures Anecdotal reports	Curr.-Based Developmentally appropriate early childhood education
Pfannenstiel & Seltzer (1985)	Program evaluation	75 new parents and their children from 4 pilot sites	Some participants possessed at-risk factors such as single parenthood, poverty, and limited education	Provide age-appropriate information on child development Help parents increase their skills as observers of their children Provide guidance in promoting children's intellectual, language, social, and motor skills development	Schools Private foundation	Provision of 23 home visits to each participant family having over 3 years of participation (+) NPAT children scored both above national norms and comparison group on measures of intelligence and achievement (+) NPAT children demonstrated significantly more aspects of positive social development than did comparison children (+) NPAT parents were more likely to have reported having their child's hearing professionally tested by age 3 than parents of comparison children (+) NPAT parents were significantly more knowledgeable than comparison group about importance of physical stimuli in child development, discipline, and knowledge of child development (+) The higher the rated quality of parent participation in the project, the better children performed on all testing measures and indicators of social development (+) Parents reported a difference in the way they perceive their parenting role as a result of the project's services (+)	Interviews Observations Kaufman Assessment Battery for Children Zimmerman Preschool Language Scale Social development parent survey Parent knowledge survey Whisper test	Curr.-Based Child development Services Prenatal guidance for parents Periodic checkups for educational and sensory development Home visits by parent educators trained in child development Monthly support group with other new parents Parent resource center with materials for families and facilities for child care

(+) indicates positive outcomes
(-) indicates negative outcomes
(0) indicates no change

Table 4
Features of Collaborative Parent Education, School Readiness, and Life Skills Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Services
Pfannenstiel et al. (1991)	Program evaluation	400 families: 142 studied in greater depth	25% were one-parent families 16% of mothers had not graduated from high school 22% of families received public assistance 27% represented ethnic groups	Provide parent education services for families of children from birth to age 3 for a period of 8 months with a minimum of 4 home visits and 4 educational group sessions Provide periodic screening for children ages 1-4 to detect developmental delay and to obtain advanced ability to offer appropriate services for fostering development Provide parent education services for families with children ages 3-4 with a minimum of 2 home visits or group meetings Assist families to give children solid educational foundations	State department of education Private foundations	Provision of 22 home visits per participant family over 3 years of participation (+) 91% of children received screenings of hearing, vision, and developmental milestones or delays (+) 33% of parents reported using resource center (+) 25% of parents engaged in organized playtime (+) 74% of participants attended an average of 6 group meetings over 3 years (+) NPAT children performed significantly higher than national achievement norms (+) More than one-half of children with observed developmental delays overcame them by age 3 (+) Parent knowledge of child development significantly increased for all types of families after 3 years of participation (+) Risk factors that remained unresolved were parent centered and required intensive efforts and resources (-) Most frequently observed risk for all families -- poor parental coping skills and family stress -- was lessened or resolved for half of the families by the completion of the program (0) For 33% of the families observed, risks were resolved by the completion of the program (-) Parents who were eager for information and put information into practice were more successful in providing supportive home environments for the socioemotional and cognitive conceptual development of their children (+) 83% of participants gave home visits their highest rating (+)	Observations in the home using Barnard's NPAT Instrument Home Inventory for Families of Infants and Toddlers 0-3 Home Inventory for Families of Infants and Toddlers 3-6 Kaufman Assessment Battery for Children Zimmerman Preschool Language Scale Social development parent survey (revised Batelle Development Inventory) Survey of parent knowledge and appropriate child rearing practices Assessment attributes measured by an 11-item psychometric rating scale Questionnaire of parent satisfaction and program services	Curr.-Based Child development Services Home visits Hearing and vision test Developmental testing Group meetings on age appropriate topics Playtime and/or resource center to lend childr books, toys, and par education materials
Young & Mark (1992) Yale Child Welfare Research Program (p. 16)	Program evaluation - brief narrative	17 women pregnant with their first child	Disadvantaged families with young children	Help disadvantaged parents support the development of their children Improve the quality of families' lives	Schools Heath services Social and child services	Long term effects were greater than short term effects (+) After 10 years, families were more likely to be self supporting (+) Children achieved higher levels of education (+) Smaller family size (+) Parents were significantly more likely to report enjoying children (+) Children were more affectionate toward their parents (+) Children's IQ scores (0) School attendance (+) Children had better behavior records and were less likely to require special school services (+)	Not stated	Curr.-Based Infant and toddler development progra Services Child development assessments Pediatrician and well-child visits Social worker visits Psychologist visits Nurse visits Counseling and suppo
Young & Mark (1992) Infant Health & Development Program (p. 24)	Program evaluation - brief narrative	8 sites nationwide with 985 infants	Children with low birth weight Premature infants	Reduce the developmental and health problems of low birth weight and premature infants	Parents Social service agencies Schools	Higher mean IQ scores (+) Fewer maternally reported behavior problems (+) Statistically significant increase in maternally reported minor illnesses for small birth weight (-) No difference in serious illnesses (0)	IQ tests	Curr.-Based Early childhood educa at child development center Services Pediatric follow-up Home visits Parent group meetings

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Table 4
Features of Collaborative Parent Education, School Readiness, and Life Skills Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Services
·ung & Mark (1992) roject CARE (p. 24)	Program evaluation - brief narrative	65 families	Families with educational or social disadvantages	Educate, support, and encourage parents in their care-giving roles Counter effects of discrimination and poverty Enhance children's social, emotional, and cognitive development	University Parents	Project children up to age 3 who received educational intervention and home visits did better on cognitive measures than children receiving home visits only and no educational intervention (+) Project children did not score consistently higher than control group children (0) Difference in parents' and children's behaviors (0) Difference in home environment (0) Difference in parents' attitudes (0)	Not stated	Curr.-Based Early education program Services Weekly visits by professional educator
·ung & Mark (1992) ·telius Child Health Supervision Study (p. 20)	Program evaluation - brief narrative	95 urban teenage mothers pregnant with first child	Urban teenage mothers	Promote parenting skills to enhance children's cognitive development	Nurses Medical services Child services	Project mothers had more conversations with their children (+) Project mothers responded more appropriately to children's behavior (+) Project mothers reported fewer behavioral problems than control group mothers (+) Project children had higher developmental quotients and IQ scores than control children (+) Project mothers continued education (+) Husbands remained at one job (+)	Not stated	Services Home visits Well-child care Support groups
·din & Bogart (1989)	Program evaluation	4 program sites: interviews at 10 sites with 579 families	Parents (no other information about program participants is stated)	Promote student achievement Promote home-school partnerships Enhance skills of caretakers in supporting children's academic performance	Schools Parents Community organizations	Program coordinators felt that most families completed most or all of program (+)	Re-analysis of data previously collected on home-school programs Interviews with staff and program coordinators Postprogram survey	Curr.-Based Not stated directly; parent education may be part of family meetings Services Home visits Family meetings at site

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Table 5
Features of Collaborative Teen Pregnancy Prevention and Parenting Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Services
Herz et al. (1984)	Intervention study with methodological limitations	56 7th & 8th graders	Urban, African-American, middle school students, single-parent homes	Prevent teen pregnancy Promote responsible sexual and contraceptive decision making	Social workers Schools Neighborhood health care facility Health care practitioners Nutritionists	Knowledge about pregnancy, reproduction, and adolescent pregnancy (+) Awareness of birth control mechanisms (+) Increased conservatism in attitudes toward circumstances when intercourse is acceptable: seventh graders (+); eighth graders (-) Acknowledged mutual responsibility for contraception (+)	Pre/post-attitude questionnaires Pre/post-knowledge test	Curr.-Based Personality development Physical and emotional changes during puberty Nutrition and hygiene Reproductive anatomies Contraception, conception and pregnancy Familial, platonic, and romantic relationships Developing educational and career goals
Olds et al. (1988)	Intervention study (longitudinal)	400 pregnant women	First-time pregnant teenagers, unmarried, low income	Promote completion of high school education Promote employment	Antepartum clinic Health department Private obstetricians Planned Parenthood Schools Home nurses Other health and human service agencies	Enrolled or graduated from high school 6 months after delivery (+) Enrolled or graduated from high school more than 46 months after delivery (0) Length of employment (+) Increased concern about employment (+) Fewer subsequent pregnancies (+) Delayed birth of second child (+)	Interviews Records from social services	Services Developmental screening of child Transportation for prenatal care Nurse home visitations Postpartum nurse home visitations Well-child care
Polit (1987)	Narrative, practitioner-oriented review	675 teenage mothers	Teenage mothers	Increase employability Increase job skills	Schools Health agency Welfare agency	Remain in school/labor force (+) Number of jobs held (+) Likelihood of having worked (+) Scores on test of employability (+)	Interviews	Curr.-Based Job training Services Child care
Roosa (1986) (a) Study 1 (b) Study 2	Narrative research-oriented review	(a) 31 adolescent mothers (b) 24 adolescent mothers	Teenage mothers and their children	(a&b) Help mothers continue education (a&b) Teach birth control (a&b) Teach parenting skills	Schools Teen parents Children	(a) Knowledge of human reproduction (+) (a) Attitudes about maternal role (0) (a,b) Knowledge of child development (+) (b) Knowledge of human reproduction (0) (b) Physical development of child (0) (b) Reproduction histories (0) (b) School retention (+)	(a,b) Pre/posttests of knowledge (a,b) Questionnaires of maternal attitudes (b) Interviews (b) IQ tests for teenage mother's children (b) Birth weight, height, child weight	Curr.-Based Family life education Child development Services Child care
Timberlake et al. (1987)	Intervention study with methodological limitations	66 pregnant teenagers	Pregnant teenagers	Increase knowledge of pregnancy, birth control, and child development	Social workers Nurses Midwives Nutritionists Pediatricians	Knowledge of labor and delivery (+) Knowledge of pregnancy (+) Knowledge of infant development (+) Knowledge of reproduction and birth control (+)	Interviews Pre/posttests of knowledge of reproduction, child development, and pregnancy	Curr.-Based Health education Prenatal Services Medical exams

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Table 5
Features of Collaborative Teen Pregnancy Prevention and Parenting Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Services
Zabin et al. (1986)	Intervention study with methodological limitations	1,366 boys 1,584 girls	Urban, African-American teenagers	Prevent and reduce teenage pregnancy	Secondary schools University medical school, departments of pediatrics, gynecology, and obstetrics	Knowledge of contraception and pregnancy risk (+) Change in attitudes toward teenage pregnancy (0) Delayed age at first intercourse (+) Increased use of birth control clinics (+) Increased use of contraception requiring forethought (+) Decreased pregnancy rates (+)	Self-report questionnaires School records Knowledge tests	Curr.-Based Sexuality Contraception Services Counseling Medical Provision of contraceptives

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Table 6
Features of Collaborative Dropout Prevention Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaboration	Outcomes	Data Collection Tools	Curr.-Based vs. Services
Baker & Sansone (1990)	Intervention study with methodological limitations	1,632 9th-12th graders (70 were referred for social services)	Students at risk for dropping out in urban schools	Reduce number of dropouts Increase academic performance Decrease noncompliant behavior	School administrators & support personnel Parents Community agencies	Increased retention (+)	Field notes School personnel interviews Student records	**Curr.-Based** Reading lab **Services** Mentoring Home visits Counseling Parenting classes GED preparation Liasions with community agencies
Bergin et al. (1992)	Program evaluation	50 students	Ethnic minorities	Retention in high school Encourage college attendance Develop citizenship skills Enhance academic preparation for college	Schools Universities Parents Senior citizens	GPA, end of sophomore year (0)	School records Grades	**Curr.-Based** 5 college summer institutes covering reading, writing, math, science, computer literacy, social science, urbanization, cultural field trips, and college preparation
Dayton et al. (1987)	Program evaluation	538 9th & 10th graders	High school students at risk for dropping out	Provide at-risk students with incentives to graduate and acquire labor-market-relevant skills	State Department of Education School district Corporate businesses Schools	Evidence from 2-3 well-implemented sites: gains in attendance, grades, earned credits (+) Reduced dropouts (+) Students' attitudes toward school improved significantly (+) Students' self-esteem improved significantly (+) Students did not have more precise postgraduate plans as a result of academies (0) Mean attendance up 90.5% from 83.5% (+) Mean number of credits earned up from 48.7 to 53.5 (+) Mean GPA 2.1 up from 1.9 (+)	Site visits Observations Interviews Questionnaires of teachers, administrators, parents, corporate representatives Student data records: attendance, retention, credits earned, grades Pre/post-student attitude questionnaires	**Curr.-Based** Incorporates vocational skills and knowledge into regular academic curriculum
Orannis et al. (1990)	Program evaluation	13 high schools 29 feeder middle schools; yearly average of 4,335 middle school students and 5,510 high school students	High absenteeism and course failure Principal's identification of student as at risk	Stimulate systemic interventions in high schools Experiment with the use of community-based organizations Dropout prevention	Schools Community-based organizations	Student attendance on the average did not improve (0) Students did not pass more courses (0) Dropout rates did not decrease (0) No consistent differences between outcomes for students in middle schools that employed CBO staff and middle schools that used Board of Education staff only (0) In high school, students served by combination of school and CBO staff tended to have somewhat better attendance and courses passed than students who were served only by school staff or only by CBO staff (+) Dropout prevention initiative helped high schools focus in a sustained way on the problems of attendance and dropouts (+) Lower dropout discharge rate for high school students	School records	**Curr.-Based** Alternative education program emphasizes career education and remedial instruction plus core curriculum Conflict resolution **Services** Attendance outreach Guidance and counseling Health services Job training Linkages between middle and high school School security Program facilitation

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Table 6
Features of Collaborative Dropout Prevention Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Services
Orannis et al. (1990), continued						during the year in which they were targeted for services than for comparison students (+) Findings varied from school to school, arguing for school-based planning that accounts for specific problems and resources of each school and for accountability in a framework of goals and shared responsibility for student outcomes (0)		
Grice (1986)	Program evaluation	489 referrals to Project Return (1985-86)	Students who have dropped out of school	Identify, contact, and counsel students who have left school or are failing to attend regularly Guide these students back to school or an alternative educational program	School Parents Local law enforcement	59.7% success rate at reenrollment (+) Early identification of truants (+) School administrators feel that program is valuable (+) School administrators reserve judgment on success with reenrollment (0)	Questionnaires Interviews Unobtrusive measures Descriptive statistics Student information data Anecdotal responses of staff	Services Counseling Home visits Placement in school
Lee et al. (1989)	Program evaluation	87 students	Minority foster children between ages 12 and 15 who were at risk for dropping out	Help youth attend school regularly Improve their academic performance Enhance work skills Form positive attitudes toward school, work, and self	Schools University Family and child services Department of human services Business Peers	Significant gain in grades (+) Significant gain in attendance (+)	Surveys Achievement tests Observations Personal interviews Analysis of grades	Curr.-Based Employment training Services Mentoring
New York City Board of Education Attendance Improvement & Dropout Prevention (1989) (a) Project SMART (b) Enhancing basic Reading Skills (c) Cultural Diversity at Prospect Heights: Strategies for Meeting Staff, Student, Parent and School Needs (d) English as a Second Language for Adults	Program evaluation (review of 4 programs)	(a) 4 high schools serving crime victims (b) 50 students in one high school (c) 10 teachers, 45 students (d) 25 Hispanic parents	(a) Students with excessive disciplinary records, truancy, poor academic performance, and deficient basic skills; returning long-term absentees; students overage for grade (b) 9th & 10th graders in lowest quartile on standardized reading tests (c) Low- income Hispanic minorities (d) Parents of students with poor attendance, poor academic performance, and poor basic skills; students overage for grade; and long-term absentees	(a) Provide mediation services on an as-needed basis to students, parents, and teachers (a) Reduce the number of suspensions for student fighting by 20% (b) Increase students' reading achievement (b) Increase student attendance and prevent dropouts (b) Reduce truancy and dropouts (c) Provide school staff with skills to enable them to promote better academic and social adjustment for newly arrived immigrant students (c) Provide leadership training for talented students (c) Provide training enabling student leaders to obtain jobs and work in the community (c) Prevent truancy and dropouts (d) Offer Hispanic parents opportunities for self-improvement (d) Increase parent involvement (d) Reduce truancy and dropouts.	(a) Victims Service Agency (a) Schools (b) University consultant (b) Schools (c) University (c) College (c) Schools (d) Parents (d) Schools	(a) Presented outreach seminars to 2,067 students (+), 16 adults were trained in mediation (+) (a) 20 adults and 8 staff received advance training (+) (a) Number of suspensions did not decrease 20% (0) (b) 41 students completed the course (+) (b) Students' NCE scores increased from 9.04 to 16.27 (+) (b) Attendance rate for 41 students was 88%, for the school as a whole it was 78% (+) (b) Provided staff development for 7 teachers (+) (b) Provided 10 sessions of individual counseling services for 41 students and 5 group sessions (+) (c) Two 10-hour workshops for 6 teachers (+) (c) Preparation of teaching manual formalizing discussions on specific language difficulties (+) (c) 67 students attended the first leadership meeting and 45 completed the program (+) (c) Parents did not participate in leadership training (-) (c) Participation in student government increased (+) (c) Many petitions for extracurricular activities (+) (d) 20 sessions for reading instruction were conducted (+) (d) Arts and crafts and dance workshops were discontinued (-) (d) 4 informational seminars were conducted and 11 parents attended (+)	(a) Interviews with school administrators (a) School records (b) Criterion-referenced reading tests (b) Telephone interviews with school personnel (b) School records for grades and attendance (c) Project logs (c) Artifacts (teachers manual) (d) Pre/post reading tests (d) Project logs	Curr.-Based (a) Educate students to prevent becoming victims of crime (a) Train parents and school personnel in mediation and conflict resolution skills (a) Training in racial and cultural disputes (b) Reading curriculum emphasizing decoding (c) Leadership course focuses on interpersonal and task-related skills (c) "Live at Lunch" cultural experience with Caribbean music, workshop on leadership development (d) Offer ESL reading component (d) Field trips to cultural events (d) Arts and crafts, dance classes

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Features of Collaborative Dropout Prevention Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Services
New York City Board of Education Attendance Improvement & Dropout Prevention (1989), continued						(d) 3 field trips were provided (+) (d) Parents' reading levels improved (16 of 20 scores were above 80% mastery) (+) (d) Parents were satisfied with the program (+) (d) Parents did not attend PTA meetings (-)		(d) Informational seminars Services (a) Hotlines (a) Crime victim offices (b) Guidance focusing on cultural barriers, supportive home environment that facilitates learning, and available community services (b) Phone calls for truancy (b) Home visits (c) Van to locate truant students (c) Special counseling for long-term absentees
Philliber (1986)	Program evaluation	24 sites with 444 students	Teenagers at risk for dropping out	Increase number of at-risk teens who complete high school education Decrease incidence of teenage pregnancy	Schools Community service agencies	Better grades (+) Decrease in suspensions (0) Decrease in dropouts (+) Decrease in subsequent pregnancies (+) One year later, continued decrease in dropout rate (+)	School records Birth records	Curr.-Based Self-development Family education Services Volunteer experience in community for participants
Wehlage et al. (1989)	Methodologically sound intervention study examining effects of 14 programs with some common goals	14 high schools with distinct programs that match the characteristics of the over 2,100 students they serve (schools selected guarantee a broad range of intervention strategies)	Urban minorities Poor rural whites, Native Americans 40% of students were of lower socioeconomic status, considered to be at risk of dropping out, and not able to conform to school expectations	Vary for each of the 14 programs; among primary goals identified were: Reduce dropouts among students with a history of school failure, truancy, or disruption Prepare students for employment in the local economy, including career exploration, experiential curriculum, focus on school-to-work transition Provide support and skills to at-risk students with academic potential Provide a curriculum with a variety of firsthand experiences Provide health services and day care for pregnant teen parents Provide academic counseling for credit-deficient youth Provide smaller classes and a small school community	Schools District drug counselor Juvenile justice system Social workers Peers Health care professionals	6 of 14 schools demonstrated positive impact on many dimensions of their students' lives (+) Programs that respond to students' need for social membership can enhance students' sense of social bonding to peers, teachers, school, conventional roles, and sociocentric reasoning; the estimated mean effect size (es) for social bonding composite was .33, ranging from 1.35 to -.20; the mean es on sociocentric reasoning was .33, ranging from .96 to .18 (+) Attendance rates improved markedly in 10 of 12 programs (+) Disciplinary referrals declined in 7 of 14 programs (0) Reading achievement declined in 9 of 14 programs (-) Writing samples improved in 6 of 12 programs with scores available, quality declined in 5 programs, and remained the same in another (0) Grade point average was collected for 7 of 14 programs; in 5 of the 7 programs, mean grade point average increased markedly, in one school it declined, and in another it improved only slightly (+) Percentage of students graduating from or completing the program range from 3% to 40% of those enrolled in 1986/87 (-) Data indicate that 25% to more than 50% of students enrolled in 1986/87 will return to the program for	Observations Interviews Pre/posttests measure attitude change (Wisconsin Youth Survey, social bonding, self-esteem, sociocentric reasoning, locus of control, academic self-concept, perception of opportunity) Pre/posttests of reading level (Degrees of Reading Power) Attendance Completion rates Changes in student GPA Incidence of disciplinary referrals Provision of rehabilitative services	Curr.-Based Schools match interventions to differences and variations in student characteristics Respond to students' need for extrinsic and intrinsic rewards Provide a broad range of opportunities for students to develop competence Establish a school culture that supports students and provides optimism about student potential Include teacher accountability for student success, an extended role for teachers Establish a school culture that includes school ownership by teachers, including education entrepreneurship, self-governance, and

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Table 6
Features of Collaborative Dropout Prevention Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Services
chlage et al. 1989), continued						another year; an additional 6% to 40% will return to another district; considered together, the programs are successful with slightly less than 50% to more than 75% of the students (+) In 10 of thirteen programs self-esteem increased; mean estimated es was .18, ranging from -.43 to .69 (+) In 7 of 13 programs students believed that greater numbers of opportunities were available to them and they had a greater chance of success in the future; the mean estimated es was .11, ranging from -.44 to .83 (+) In 8 of 13 programs students reported higher aspirations for further schooling; the mean estimated es was .16, ranging from -.19 to .87 (+) A more internal locus of control was reported by students in 9 of 13 programs; the mean estimated es was .20, ranging from -.19 to .95 (+) Students' academic self-concept increased in 9 of 13 programs; the mean estimated es was .26, ranging from -.17 to .94 (+) School programs provided students with access to social services (+); 25% of students were enrolled in social service programs (+)		collegiality Establish small school structures promoting one-on-one relations among teachers and students and supporting a school's autonomy and flexibility and teachers' control over the school as a workplace Develop knowledge and skills, including perhaps remedial curriculum courses related to childbearing and child rearing Services Counseling with drug counselor, social workers, nurses, and teachers Coordination with local juvenile justice system and other social agencies Saturday detention Drug evaluations and rehabilitation Coordination of JTPA placements and social service support Newspapers in different languages Peer role models Home visits Child care Medical check-ups at a school-based clinic GED preparation Community role models

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Table 7
Features of Collaborative Alcohol and Drug Prevention and Abuse Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Services
Beaulieu & Jason (1988)	Methodologically sound intervention study	5 elementary school classrooms 9 peer helpers	Urban, African-American 7th graders at risk for drug abuse	Prevent or reduce use of tobacco, alcohol, and marijuana	School Peers	Increased drug knowledge (+) Improved problem-solving skills in drug-related situations (+) Drug usage (0)	Pre/posttest on drug knowledge Program satisfaction surveys	Curr.-Based Drug information, decision-making and problem-solving techniques, social competency skills
Carpenter et al. (1985)	Intervention study with methodological limitation	30 Native-American teenagers	Native-American teenagers	Teach responsible drinking habits	Peers	Decreased use and quantity of alcohol use (+) Decrease in peak blood alcohol levels (+) Attitudes and knowledge about drinking (0) Self-esteem (-)	Self-reports of use Breath tests School reports Drinking and Alcoholism Scale (attitudes) Coopersmith Self-esteem Inventory Hamburg et al. alcohol questionnaire (knowledge)	Curr.-Based Facts about alcohol and alcoholism self-control procedures Services Peer counseling
Crisp (1980)	Program evaluation (review of 10 programs)	10 drug abuse prevention programs in black ghetto neighborhoods in Washington, DC 21 agency surveys 33 student surveys 13 community resident surveys	Low income African Americans who are or may be at risk for drug abuse	Prevent drug abuse and addiction	School-social agencies in unspecified number of programs	Belief that short-term counseling should receive less funding (0) Belief that educational interventions should receive more funding (0) Belief that agency workers are doing an inadequate job in serving population (over 50% negative, 25% not sure) (-) Belief by students that school programs are not successful (-) Willingness to aid agency in preventing drug abuse (+)	Questionnaires Participant/observer reports Interviews	Curr.-Based Educational programs Recreational programs Services Short-term counseling Job placement Community outreach
Edwards & Edwards (1988)	Narrative, research-oriented review	4 alcohol programs	Native-American youth at risk for alcoholism and their families	Promote alternative activities to drinking Emphasize positive feelings of self-esteem and identity Provide information regarding alcohol Encourage responsible decision making regarding drinking behaviors	Parents Community leaders Professionals Social service workers Native Americans from all age groups (especially "Elders") Community agencies, including recreation and health Peers	Students report learning information about drugs (+) Students express discomfort with own drug use (+) Awareness of resources (+) Willingness to use resources (+)	Not stated	Curr.-Based Alternative programs to develop self-esteem and identity Information on drugs Improve decision-making abilities Clarify attitudes and values Improve communication Learn or improve health skills Develop social responsibility Identify community resources Services Drug-free social and recreational activities Alcoholism awareness day

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Table 7
Features of Collaborative Alcohol and Drug Prevention and Abuse Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Services
Hansen et al. (1988)	Methodologically sound intervention study (longitudinal)	2,928 6th-10th graders	6th-10th graders in urban area	Prevent onset or reduce prevalence of tobacco and alcohol use	Schools Peers	Prevented onset or prevalence of tobacco use (+) Prevented onset or prevalence of alcohol use (0)	Pre/post self-reports on tobacco and alcohol use Saliva tests	Curr.-Based Information on tobacco and alcohol
Johnson et al. (1990)	Intervention study	1,607 6th & 7th graders	6th & 7th graders in urban area	Reduce prevalence of drug, alcohol, and tobacco use	Schools Parents Media Community organizations	Reduced prevalence of tobacco and marijuana use relative to control group (+) Reduced prevalence of alcohol use relative to control group (0)	Student questionnaires	Curr.-Based Drug use resistance skills training Knowledge of psychosocial consequences of drug use
Lehr & Schmck (1987)	Intervention study	40 school nurses; exact number of students, parents, and other school personnel not available	Children of alcoholics in grades 4-6 in urban area	Develop and provide educational opportunities for school staff and parents to increase knowledge of how alcoholism affects family members Increase knowledge of problem-solving techniques and ways of coping in daily life with alcoholism Ensure that a trained person at each school site can provide support and make referrals for child, parent, or staff member who seeks help for alcoholism or chemical dependency	Schools Counselors Nurses	Increased knowledge about alcohol and alcoholism (+) Increased requests from students, parents, and school personnel for help (+) Community members offer assistance (+) Community agencies work more closely with schools (+) Continuing provision of information on drugs and alcohol (+)	Pre/posttests on alcohol awareness Compiled free response comments about program Program records	Curr.-Based Alcohol education Services Referrals support group
Schinke et al. (1988) (a) Study 1 (b) Study 2	Intervention study	(a) 1,281 5th & 6th graders assigned to three conditions: coping and refusal skills with discussion, discussion only, and control (b) 61 Native-American students, mean age 11.7	(a) Adolescents (b) Native-American adolescents	(a) Prevent tobacco use (a) Teach students refusal and coping skills (b) Prevent drug use (b) Teach students refusal and coping skills	(a) Schools (a) Social workers (a) Peers (b) Schools (b) Social workers	(a) Over time self-reported smoke and smokeless tobacco use increased (-) (a) Self-reported rates of use in skills group were below the grand mean of all students (+) (a) Skills group reported lower rates of smoking at 6-, 12-, 18-, and 24-month follow-ups, compared to other groups (+) (a) Lower use rates validated with saliva tests among pupils receiving skills-based intervention (+) (b) Increased knowledge about drug and and alcohol abuse (+) (b) Held less favorable attitudes about drug and alcohol use in Native American culture (+) (b) Treatment group had higher ratings on parameters of self-control, alternative suggestions, and assertiveness under peer pressure to use drugs than control group (+) (b) At posttest, treatment group self-reported lower use of tobacco, alcohol, marijuana, and nonmedical drugs (+) (b) At 6-month follow-up, treatment group had higher scores than control on knowledge and ratings of self-control, alternative suggestions, and assertiveness (+) (b) At 6 months, less use of tobacco, alcohol,	(a) Tobacco use perceptions (a) Saliva tests (a) Self reports (b) Pre/posttests of knowledge (b) Interactive behavior tests	Curr.-Based (a) Tobacco use information (a) Peer testimonials (a) Debates, games, and homework (a) Refusal and coping skills (a) Use of self-statements, problem-solving, and communication (b) Bicultural competence (b) Problem-solving, communication, social support, and competence skills (b) Refusal and coping skills

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Features of Collaborative Alcohol and Drug Prevention and Abuse Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Services
Tobler (1986)	Meta-analysis/ quantitative synthesis	98 research studies describing 143 drug prevention programs and producing 475 effect sizes (443 of these effect sizes were from school-based programs, 9 from social agencies, and 23 from other types of organizations)	Adolescents	Abstinence Wise use resulting in reduction of use Intervention strategy for safety Indirect interventions focus on correlates of use Direct interventions resistance to social pressure	Peers Schools Social agencies	marijuana, and inhalants (+) Increase knowledge of legal, biological, and psychological effects of drug abuse (+, mean es .52) Attitudes toward drug use (+, mean es .18) Use of cigarettes only, alcohol only, soft drugs only, all drugs (hard drugs included) (+, mean es .24) Development of affective skills, decision making, assertiveness, and self-esteem (+, mean es .24) Changes in behavior, including principal reports, parent reports, arrests, and hospitalizations (+) Changes in school grades, comprehensive tests, and attendance (+, mean es .27) Abstinence (+, mean es .16) Wise use reduction (+, mean es .35) Indirect correlates of use (+, mean es .22) Direct resistance to social pressure (+, mean es .49) Multimodal programs are more successful (+) Peer programs are superior to all types of drug prevention programs (+, mean es .35, $p < .0005$)	Paper-pencil tests of knowledge and attitudes School records Standardized test scores Parent records Physiological tests Self-reports	Curr.-Based Knowledge only Affective only Refusal skills Social and life skills Knowledge and affective Alternative competencies Services Alternative activities (youth centers) Peer counseling Peer teaching
Western Regional Center for Drug-Free Schools & Communities (1991)	Program evaluation	(a) School district with 8,000 students (b) School district with 24,000 students (c) Not available (d) School district with 12,096 students (252 in evaluation) (e) School district with over 600,000 students (f) School district with 44,000 students (1,463 data base records, 34 principals, and 39 intervention specialists surveyed) (g) Not available	(a) High-risk youth (b-g) youth	(a) Prevent alcohol and drug abuse (b) Provide integrated services to prevent alcohol and drug abuse (c) Prevent alcohol and drug abuse (d) Prevent alcohol and drug abuse (e) Improve parenting skills (f) Provide integrated services (g) Prevent alcohol and drug abuse	(a) Schools (a) Police (b) Schools (b) Western Regional Center (c) Schools (c) Public/private community organizations (d) Schools (d) Western Regional Center (e) Schools (e) Parents (e) Social workers (f) Schools (f) Western Regional Center (g) Schools (g) Home (g) Community	(a) Program has progressed well in implementation and in working cooperatively with community (+) (b) Number of students referred to SAP (0) (b) School retention of referred students (+) (c) Not available (d) Change in use of beer, wine, liquor, marijuana, and cigarettes (0) (e) Not available (f) 67% of principals say drug policy is consistently enforced (+) (f) 40% of principals indicate need for more training and technical assistance in all areas of SAP (+) (f) Less than half of intervention specialists say school has comprehensive program in place (-) (f) None of the intervention specialists indicated parent/community involvement (-) (f) Better grades, better attendance, better communication skills, and fewer behavioral problems (+) (g) Not available	(a) Student questionnaires (b) Record from SAP data base (c) Surveys, tests (d) Pre/post surveys (e) Questionnaires will be used (f) Reports from data base tracking of referrals, survey of principals and intervention specialists, interview data from school visits (g) Questionnaires will be used	Curr.-Based (a) Drug education and prevention program in schools and community (b) TEAM-UP curriculum based on local needs (c) K-6 curriculum for awareness and resistance (d) K-12 curriculum to prevent or reduce the use of alcohol, tobacco, and marijuana (d) Provide information on effects of drugs (d) Develop refusal and coping skills (d) Promote bonding between student and society (e) 15-part videotape series to provide instruction on effective parenting skills; drugs and alcohol use are only 1 of 14 topics (f) Drug education classes (g) Distance education about 22 televised sections on drugs and alcohol Services (a) Drug intervention and counseling program

(+) indicates positive outcomes
(-) indicates negative outcomes
(0) indicates no change

Table 7

Features of Collaborative Alcohol and Drug Prevention and Abuse Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Services
Western Regional Center for Drug-Free Schools & Communities (1991), continued								(a) Parent support group (a) Making information accessible (b) Computerized data base to manage referral records and progress of students (c) Hotline (c) Recreational programs (c) Essay and poster contests (c) Drug-free alternative social activities (c) Training and workshops for students and staff (f) Screenings, interventions, and follow-up (f) Support groups (f) Referrals to outside agencies

(+) indicates positive outcomes
(-) indicates negative outcomes
(0) indicates no change

Table 8
Features of Collaborative Integrated Services Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Service
Center for the Study of Social Policy (1991)	Formative program evaluation	4 cities	Young people at risk of alcohol and drug abuse, dropping out, teen pregnancy, violence, and unemployment	Integrate services Reduce school dropout rates Reduce teenage pregnancies Reduce youth unemployment and activity	Schools Political organizations Business Community volunteers Health agencies Community-based organizations	Year 1 Little progress in establishing a strategy for institutional change (-) Each collaborative concerned with administrative details (-) Year 2 Frustration with slow pace of change (-) No new linkages created among existing institutions through joint planning and budgeting (-) Creation of management information system to track condition of youth (+) Case managers hired and trained to work with about 50 students each, arranging for services to be delivered (+) Some change in school structure (school day lengthened, "clustering" within school) -- most are add-on changes (+) Enhanced or expanded family life or sex education curriculum (+) Additional nurses placed at pilot schools (+) Establishment of high school clinics (+) No agenda to address health problems (-) Business-school compacts (+) Job training and placement under federal programs arranged (+) No systematic change in opportunities for young people (0)	Not stated	Curr.-Based Family life and sex education Services Management information system Case management approach Nurses placed at school High school clinics Job training and placement
Caring Communities/Philliber Research Associates (1991) (a) Community 1 (b) Community 2	Program evaluation	2 communities	Unemployment, poverty, family dysfunction, higher-than-average rates of child abuse, alcoholism, frequent absenteeism, excessive tardiness, academic failure, aggressive social behavior, prior involvement with juvenile authorities, impending out-of-home placement, drug abuse and/or drug trafficking in the home, emotionally or mentally handicapped, behavior disorder	Restructure offering of services to children and families in need to create a caring community in which there is coordinated and cooperative effort among schools, state and local agencies, and the community to develop and promote family-centered prevention and intervention activities Ensure children remain in school while increasing success Ensure children remain safely in their homes while avoiding out-of-home placement Ensure children remain out of the juvenile justice system	State health, mental health, and social service agencies Schools Community Parents Private foundations	(a) Program has served several hundred children and households since its inception, with interventions ranging from classroom presentation to intensive case management (+) (a) Children receiving more intensive case management services had greater grade improvements than participating children with less services or in a control group (-) (a) Children improved grades and work habits (+) (a) Children's absenteeism increased (-) (b) Successfully began developing collaborative work and implementing planned activities (+)	School records	Curr.-Based (a) Drug knowledge (a) Social competency, cultural self-identity (b) Drug and alcohol prevention by developing self-esteem (b) Parenting skills (b) Problems with chemical dependency (b) Youth concerns (b) Develop refusal and coping skills Services (a) Behavior modification (a) Recreational activiti (a) Case management (a) Drug prevention/ intervention (a) Health care (a) Child care (a) Pre-employment intervention

(+) indicates positive outcomes
(-) indicates negative outcomes
[redacted]indicates [redacted]change [redacted]

Table 8
Features of Collaborative Integrated Services Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Service
Caring Communities/Philliber Research Associates (1991), continued			Learning disabled, victim of sexual abuse, victim of physical abuse					(a) Tutoring (b) Case management (b) Student assistance programs (b) Provision of awareness information on improving self-esteem (b) Teen activity center (b) Student support groups (b) Inter-generational programs
Cities in Schools (CIS) Research & Evaluation Unit (1992)	Review of basic program evaluations	Results from over 31,000 elementary, junior high, and high school students at 35 local CIS sites (most recent enrollment figures provided)	Students at risk for school failure and dropping out; 75% are minorities, often from urban areas; students typically are eligible for JTPA and/or free or reduced lunch program	Vary by site, but among the most common goals are: Decrease in dropout rates Decrease in delinquency Prepare participants for adult work roles Improve school performance Improve school attendance Improve graduation rates Bring community resources to schools Provide case management approach Provide health services Provide tutoring Provide mentoring Provide recreational activities	Social services Community Parents Members of business community Schools	Provision of wide array of services (+) Outcomes may be recorded differently for each site Percent of actual daily attendance (range 44-94%) ADA (+) Grade advancement rates (median 65.3%, range 3-100%) (+) Dropout rates (median 5.3%, range 0-37%) (+)	School records Descriptions of community involvement Program services	Services Counseling Tutoring Social services Contact with role models from business community
Fresno Tomorrow Inc. (No date)	Program evaluation	2,800 children	Socioeconomically and/or educationally disadvantaged children and their families	Increase the academic and social literacy of high-risk children Promote regular school attendance Reduce chronic transiency Strengthen family functioning and improve the home environment Empower parents to serve as effective partners in education and to act as positive role models in their children's lives Increase community accountability for the conditions of Fresno children by serving as a bridge for neighborhood involvement in education and human services Identify fiscal and regulatory barriers to the provision of comprehensive services to children and their families	Schools County governments City governments Colleges and universities Community-based service providers Parents Businesses	Provision of wide array of services (+) Parent involvement (+) School attendance (+) Decrease referrals for misbehavior (+) Of 60 high school students in the program, none had dropped out or become pregnant, and only 3 committed delinquent acts (+)	Manager assessment of care goals in individual cases Supervisor review of cases Department of Social Services quality control sampling State and federal program audits Statistical data compiled by staff not specified	Curr.-Based Family literacy, parentin household mangement education Cultural enrichment Parent involvement workshops Positive recreational activities Services Case management referrals, screening, an assessments Home and school visits ' case mangement Attendance incentives Community and family advocacy Cross-age tutoring

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Table 8
Features of Collaborative Integrated Services Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Services
Fresno Tomorrow Inc. (No date), continued				Develop and demonstrate effective means to overcome institutional barriers				Parent and child support groups Mentoring
Jewish Family and Children's Services (1991)	Intervention study	102 teachers 758 1st-5th graders in 6 schools	Children with serious social and emotional problems and their teachers	Investigate whether emotional and academic well-being of children could be improved by providing social-work consultation services to public school personnel Work collegially to identify, assess, and address the problems of stressed children and their families Improve school personnel's ability to manage the problems confronting them Learn how to make effective interventions and referrals Improve the school environment as a whole	Philanthropic foundation Schools Social workers Jewish Family and Children's Services University faculty	Provision of wide array of services (+) Teachers reported increased sense of responsibility for children's learning (+) Children's internal locus of control increased (+) Teachers reported increase in knowledge and enhanced professional capability resulting from collaboration with mental health consultant (+) Teachers indicated an increased sense of responsibility for the success and failure of students as a result of self-perceived moderate increases in their ability to resolve job-related problems (+) Teachers' use of mental health consultation had a positive enhancing effect on children's self-expectations and academic achievement (+) Approximately 10% of the students in the project required and were referred for intensive mental health or social services (+)	Teacher self-reported attitudes and behaviors Pre/post student measures on self-perceptions School achievement perceptions of classroom environment	Curr.-Based Inservice training for teachers on classroom management, pedagogy, and diagnosis of child behaviors and attitudes Services On-site mental health consultation Referrals to social service agencies
Jordan & Hernandez (1990)	Program evaluation	1,939 children and youths 13 mental health programs	Emotionally and behaviorally disturbed children, many with a history of severe physical abuse, sexual molestation, and learning disabilities	Provide focused mental health care to reduce costs Maximize clients' daily living skills Provide collaborative mental health care to reduce costs	Social service agencies Vocational settings Correctional facilities	Provision of wide array of services (+) Cost avoidance (+) 20% decrease in out-of-county court-ordered placements (+) 22% decrease in recidivism by juvenile offenders (+) 25% reduction in rate of state hospitalizations of minors from 1980-81 levels (+) 10% decrease in out-of-county non-public school residential placements of special education pupils (+) 50% of children at risk of imminent placement able to remain at home at least 6 months because of intensive in-home crisis program (+) School attendance and academic performance improved in mentally disordered special education pupils (+)	Assume authors used county and state health records Methods for calculating outcomes were "negotiated in a series of meetings with the State Department of Finance" AFDC payment records Reports from family and school officials Woodcock-Johnson Psycho-Educational Battery	Services Case management Family preservation Family reunification Intensive out-patient services Enriched school classes for seriously disturbed children Foster care Private sector provides resources such as dental exams, clothing, or medical treatment Crisis residential home Corrections residential facility Mental health case management team Juvenile justice placement screening Protective services Placement screening committee Expanded special education IEP

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Table 8
Features of Collaborative Integrated Services Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Service
Maryland Tomorrow (1990-92)	Program evaluation-3rd year	All children in Maryland's schools were examined Sample of Maryland Tomorrow's participants attending 25 schools were compared to comparable nonparticipants	Adolescents with low academic achievement and a history of being retained	Reduce the number of youths who drop out of high school Increase the number who successfully graduate and go on to postsecondary education or employment Enhance students' skills development Increase business involvement Provide successful transitions to work and school Improve staff development	Parents Private industry council (JTPA) Schools Employment training system Business community	7,000 students in 80 secondary schools received program services (+) Program participants who were promoted at the end of 1st year and received continuous services had a dropout rate of 9.8% compared to nonparticipants at 16.1% (cohort 1) (+) By the end of 1990-91, 27.9% of non-participants who had entered 9th grade in 1988-89 had dropped out, their dropout rate was 73% higher than Maryland Tomorrow's 3-year dropout rate of 16.1% (cohort 1) (+) Among cohort 1 students still in school, 56.6% who had not passed 4 of the competency tests passed an additional test in 1990-91, compared to 52.6% of nonparticipants (+) Maryland Tomorrow's participants were more likely to pass math and citizenship competency tests than controls (+) Among cohort 1 students, Maryland Tomorrow's participants had earned an average of 7 fewer credits than nonparticipants (-) Among cohort 1 students, Maryland Tomorrow's participants had a drop-out rate that was 18% lower than the 3-year dropout rate for nonparticipants (+) Among cohort 2 students, the impact of Maryland Tomorrow faded so that after 3 years the participants and nonparticipants had the same cumulative dropout rate (0) Cohort 2 Maryland Tomorrow's students continued to outperform nonparticipants on the Maryland Functional Tests (+)	School records Academic achievement using the Maryland Functional Tests in reading, writing, and citizenship Grades Academic credits earned End-of-year status (dropped out, failed, promoted) Site visits	Curr.-Based Basic skills enhancement Work experience Motivation Leadership development Services Student support and counseling Transition services Call parents to give positive feedback Continue efforts to locate and retrieve students who have been out of school as long as two months Arrange for early entry into vocational education
Orr (1989)	Program evaluation	11 school sites evaluated (19 in program) 740 students in evaluated schools	Youth at risk for dropping out	Link community resources to the needs of students at risk for dropping out Integrate nonacademic services with educational programs	Schools Community service agencies Foundations	Provision of wide array of services (+) Dropout rates of at-risk students reduced significantly (+) Academic performance increased (+) Absenteeism decreased (+)	Students' records (truancy, enrollment, academic performance) Interviews and questionnaires to determine client and staff perceptions	Services Coordination of access to mental health, medical care, child protective services, parenting skill classes, child abuse and drug/alcohol programs Support groups Individual counseling Case management Medical care Teen sexuality/parenting workshops, homelessness support Play/art therapy Family planning/pregnancy testing STD care

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Table 8
Features of Collaborative Integrated Services Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Servi
Orr (1989), continued								Job counseling/career planning/placement Transportation Food Clothing Recreational activities Child care
Mooney & Eggleston (1986)	Program evaluation	154 4th-12th graders in 5 schools	Students in rural schools	Integrate community mental health services with schools Enhance self-concept Increase sensitivity in response to other people and their life situations Problem solving, knowledge, and skills to seek assistance appropriately	Community mental health center Schools County agencies	Provision of wide array of services (+) Agency presence in school (+) Happiness with program coordinator (+) Referrals to agency (+) Students report that they are happy (+) Students' perception that they benefited from program (+)	Pre/post surveys	<u>Curr.-Based</u> Enhancing self-concep Increasing sensitivity Problem solving, knowledge, and skill seek assistance <u>Services</u> Referrals to mental hea child and protective services

(+) indicates positive outcomes
(-) indicates negative outcomes
[redacted]

Table 9

Features of Collaborative Parent Involvement Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Services
Comer et al. (1988)	Program evaluation	306 3rd-5th grade African-American students: 176 from 7 experimental schools, 91 from 4 control schools, and 39 from 3 special schools (creative arts academy, gifted and talented, and Montessori) 98 teachers: 56 from experimental, 29 from control, and 13 from special schools 276 parents: 155 from experimental, 85 from control, and 36 from special schools	Urban youth	Change human interactions within school's social system to better serve students Open schools' social structure to a variety of inputs Increase parent involvement in schools Empower the community	Schools Parents Community	Student rating of improvement of classroom climate (+) Teacher rating of improvement of school climate (0) Parent rating of improvement of school climate (+) Decrease student absences (+) Improve classroom reading grades (+) Improve classroom math grades (0)	Classroom Environment Scales (Trickett & Moos) School Climate Survey Attendance records Classroom grades in reading and math	Curr.-Based Basic and social skills to improve self-concept and negotiate mainstream American society, including finances, political process, and securing jobs Academic skills (verbal ability, perceptual performance, quantitative ability, motor coordination) Stations manned by parents Parents involved in 3 sequential levels of participation: broad-based, day-to-day school affairs, and school governance Services Intervention staff provides individual programs for each high-risk child Mental health team
Epstein (1988)	Correlational research study	293 3rd & 5th graders	Urban youth	Increase student achievement in reading and math through teacher use of parent involvement	Schools Teachers Parents	Students' gains in reading achievement were related to teachers' active use of parent involvement (+) Student gains in mathematics were not (0)	Pre/post standardized tests School records	Curr.-Based Reading and math homework
Epstein & Dauber (1989)	Program evaluation	270 6th-8th graders	Urban youth	Increase students' awareness of works of art Develop students' ability to interpret and discuss works of art	University research center Schools Teachers Parents Grandparents	Increase knowledge of particular artists and their works (+) Develop attitudes and preferences for different styles of art (+) Increase willingness to convey likes and dislikes (+)	Pre/posttests of knowledge with free response expressing likes and dislikes	Curr.-Based Art and social studies
Epstein & Hemick (1991)	Intervention study	244 7th graders; 99% African American	Most students below average in reading and language skills	Maintain and improve students' English skills Increase parental involvement in student skills development	Schools Parents	Students with marginal pretreatment academic skills did better than expected in the autumn if they completed more home packets over the summer (+) Students who work with parents rather than alone complete more summer home learning activities (+) Urban middle-grade parents are eager to stay involved in their child's education throughout the year but require clear information from the schools on how to do so (+)	Student records-GPA Pre/posttest standardized achievement scores	Curr.-Based English skills activity packets for summer home use

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Table 9
Features of Collaborative Parent Involvement Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Services
Graue et al. (1983)	Meta-analysis/ quantitative synthesis	29 controlled intervention studies producing 121 effect sizes	Ethnic minorities, Urban and rural children Low income, low-achieving students	Increase the educationally stimulating qualities of the home environment Extend or multiply quality and quantity of academic instruction beyond the ordinary school day Stimulate children to be more receptive to lessons at school Promote closer family relations Increase children's academic achievement	Parents	91% of the 121 effect sizes favor treatments over control groups, the median es is .50 (+)	Achievement tests Curriculum specific tests Vocabulary Attitude tests Memory and perception tests Tests of study skills Observations	Curr.-Based Parents learn how to conduct sessions at home with children to increase reading skills Provide instructional materials, including children's books Social learning principles such as modeling and role playing to influence the child's choice of reading materials Provide perceptual skills and auditory motor instruction Involve parents with children's school progress Use contracts among superintendent, principal, teacher, parents, and child detailing their roles in the program Services Parenting classes
McCarthy & Sull (in press)	Program evaluation	Single accelerated school	LEP, transient, low socioeconomic status, low academic achievement, ethnic minorities	Use comprehensive approach to improving schooling for children in at-risk situations as they enter the educational mainstream by the end of elementary school Develop capacity at the local school site for teacher empowerment and decision making Build on strengths of all members of the school community, including parents, by involving them in collaborative leadership and decision making	School Parents Community organizations Businesses Media	Improved communication among school personnel (+) Change in school governance structure empowering school personnel (+) Greater parent and community involvement (+) Adapting curriculum and instruction to needs of children (+) Increase student achievement (+)	Observations Interviews School records Standardized test scores Monitoring data collected during implementation	Curr.-Based Process for developing a school ethos of high expectations and acceleration Active learning Flexible grouping Integrated thematic learning Unique approaches to bilingualism Use of community and parents as resources
White et al. (1992)	Meta-analysis/ quantitative synthesis	20 interventions, including effect sizes, cited by prominent reviewers 193 center-based intervention studies	Parents of disadvantaged and at-risk students	Develop parenting skills Promote social and emotional support to family members Exchange information between parents and professionals Participate in program by parents Develop appropriate parent-child relationships Assist parents in accessing community resources	Parents Psychological services Social workers Schools	Results from 20 interventions cited by prominent reviewers: Parent as intervener (10 positive effect sizes between 0.01 and 1.00, 1 positive, es above 2.0, 1 zero es, 2 negative effect sizes between -0.01 and -1.00, 1 negative es between -1.0 and -2.0) (+) Parent as classroom aide (one es of 0.95) (+) Parental involvement in center-based programs: Immediate benefits to disadvantaged and at-risk children in high internal validity studies (0)	Not applicable	Curr.-Based Teach developmental skills Parent-child activities to enhance attachment Sensory stimulation Teach parents generic child management skills Services Parent serves as classroom aide

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Table 9
Features of Collaborative Parent Involvement Programs

Author/Project	Type of Study	Sample Size	Characteristics of Study Sample	Program Goals	Collaborators	Outcomes	Data Collection Tools	Curr.-Based vs. Services
White et al. (1992), continued		43 home-based intervention studies		Empower parents		Immediate benefits to disadvantaged children whose parents are extensively involved [low validity studies] (+, small es) Parental involvement in home-based programs: Immediate benefits to disadvantaged children whose parents had little or no involvement [high validity studies] (0) Immediate benefits to disadvantaged children whose parents had little or no involvement [low validity studies] (+, small es)		Counseling and support groups Assist parents in accessing available community and government resources Provide job- related skills to parents
Whitsett, et al (1992)	Program evaluation (statewide)	10 pilot projects 1990-91: 2,000 parents and their children, 242 of the 2,000 parents were teen parents	Low-income, ethnic-minority, LEP students and their parents; teen parents	Improve academic outcomes, attendance, and social behavior of students Provide parent education Increase parental involvement Provide support services	State Department of Health Community health agencies Community services, e.g., Child Protective Services Child care services organizations Medical clinics hospitals Area housing authorities Schools	Performance data for children whose parents were served and for teen parents enrolled in school, including: pre/post average grades, pre/post standardized test scores, meeting local criteria for making satisfactory progress, suspensions/expulsions, and attendance (0) 2,100 hours of training delivered to parents in parenting and child development (+) Nearly 25% of parents are part of school task forces or committees (+) Across 10 pilots, 129 agencies and organizations provided services (+)	Grades Standardized test scores in reading and math School records Logs of agency involvement Records of parent training sessions	Curr.-Based Training in parenting and child development Guided and structured activities with children Services Advisory services Counseling Case management Medical clinic Testing Child care Transportation

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Table 10
Positive, Neutral, and Negative Selected Outcomes for Each of the Six Programmatic Areas

Programmatic Area	Direction of Outcome	Special Emphasis*	Attendance	Achievement, Grade Point Average, & Academic Grades	Reduced Behavioral Problems	Self-Esteem	Dropouts	Number of Outcomes	Percentage of Outcomes
Parent Education, School Readiness, & Life Skills	+	22	2	6	5	2	1	38	79
	0	6	0	1	0	1	0	8	17
	-	2	0	0	0	0	0	2	4
Teen Pregnancy Prevention & Parenting	+	4	0	0	0	0	1	5	83
	0	1	0	0	0	0	0	1	17
	-	0	0	0	0	0	0	0	0
Dropout Prevention	+	8	6	7	0	5	**	26	72
	0	2	1	2	3	0		8	22
	-	1	0	1	0	0		2	6
Alcohol & Drug Prevention & Abuse	+	14	2	2	2	1	0	21	78
	0	4	0	0	0	0	0	4	15
	-	1	0	0	0	1	0	2	7
Integrated Services	+	9	4	8	6	2	6	35	95
	0	0	0	0	0	0	1	1	3
	-	0	1	0	0	0	0	1	3
Parent Involvement	+	8	1	6	0	0	0	15	68
	0	2	1	3	1	0	0	7	32
	-	0	0	0	0	0	0	0	0
		N %	N %	N %	N %	N %	N %		
Overall	+	65 77	15 83	29 80	13 76	10 84	8 89	140	80
	0	15 18	2 11	6 17	4 24	1 8	1 11	29	16
	-	4 5	1 6	1 3	0 0	1 8	0 0	7	4

* "Special Emphasis" refers to the main focus of the program. For example, the special emphasis of dropout prevention programs is the reduction of dropout rates; for alcohol and drug prevention and abuse programs, it is the reduction in use or delay of first usage of alcohol and drugs.

** Information on the number and direction of dropout outcomes is found in the Special Emphasis column for Dropout Prevention.

Parent Programs: Past, Present, and Future Practices

Aquiles Iglesias

National Center on Education in the Inner Cities

The research reported herein is supported in part by the Office of Educational Research and Improvement (OERI) of the U.S. Department of Education through a grant to the National Center on Education in the Inner Cities (CEIC) at the Temple University Center for Research in Human Development and Education (CRHDE). The opinions expressed do not necessarily reflect the position of the supporting agencies, and no official endorsement should be inferred.

INTRODUCTION

The importance and positive effects of early intervention for developmentally vulnerable children[1] have long been recognized (Berrueta-Clement, Schweinhart, Barnett, Epstein, & Weikart, 1984; Copple, Cline, & Smith, 1987; Darlington, Royce, Snipper, Murray, & Lazar, 1980; Zigler & Berman, 1983). Studies have also noted that the significant gains made by children who participate in these programs fade over time (Haskins, 1989; Hubbell, 1983; White, 1985). Reynolds (1992) suggests that "a complex network of effects may be at work, whereby the maintenance of the positive effects of preschool programs are [sic] dependent on intervening variables experienced after the intervention ended" (p. 140). One factor that might account for the diminishing long-term effects of these programs is children's social environments. The Kauai study of Werner and associates (Werner, Bierman, & French, 1971; Werner & Smith, 1982) supports the notion that children's social environments act to foster or impede the maintenance of positive developmental courses. These studies and others suggest that the focus of intervention efforts, which in the past has been mainly on changing the children themselves, must be expanded to include changing children's environments. Subsequently, since children are inextricably embedded within the family and the family is often viewed as children's most immediate and influential environment, family members (primarily mothers) have been the central focus of numerous intervention programs.

Empirical evidence strongly suggests that family members who are actively involved in their children's education as part of or subsequent to an early intervention program (Shonkoff & Hauser-Cram, 1987; Reynolds, 1989, 1992) become "better" socializers of their children and enhance their children's educational outcomes. These and other findings (Bronfenbrenner, 1974; Dornbusch, 1988; Eagle, 1989; Henderson, 1988; Hester, 1989; Lazar & Darlington, 1982; Seitz & Apfel, 1991; West, Rasinki, & Camburn, 1990) have demonstrated the positive relationship between parental involvement[2] and children's educational achievement. As will be discussed in a subsequent section of this paper, this relationship is not as simple as has been suggested in the literature. Despite the general consensus on the value of parental involvement and the public and private sector support for such programs, there continues to be great concern over the lack of involvement of families in their children's education (Clark, 1983; Comer, 1984; Delgado-Gaitan, 1990; Laosa, 1983). Some authors have charged that the

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[1] The term "developmentally vulnerable" is used throughout this text to describe those children who, due to social, biological, linguistic, and/or economic conditions, are at risk for developmental delay.

[2] The term "parental involvement" is used throughout this text to refer to any activity that parents do with their children to foster academic success. These activities are not limited to academic tasks.

source of this problem lies in the barriers placed by school systems, while others feel that it originates with parents.

Davies (1992) suggests that strengthening the relationship between home and school requires a widespread shift in school practice, and that this shift has not occurred due to the traditional mindset of school personnel, a gap between theory and practice, and a lack of a comprehensive policy framework. The lack of parental involvement cannot, however, be attributed solely to school personnel. An international study of parental involvement found that, regardless of income, families in the United States, England, and Portugal tend not to actively participate in their children's education (Davies, 1988). In one study, Rothman (1990) found that only one third of the parents interviewed had contacted schools about their children's academic progress, with higher income parents being most likely to initiate contact. Nicolau and Ramos (1990) found Latino families, whose children's academic performance is on the average below that of White and African-American children, participate at a rate that can be described as "low to nonexistent." This pattern is of great concern because poverty and social disadvantage have often been associated with educational underachievement.

The most cited studies on the effects of parental involvement on children's academic achievement (Bronfenbrenner, 1974; Comptroller General, 1979; Datta, 1971; Florin & Dokecki, 1983; Karnes & Lee, 1978; Lazar, 1981) support the notion that programs involving parents are more effective than those that do not. The strength of the database from which this conclusion has been reached was questioned recently by White, Taylor, and Moss (1992). Regardless of whether a database is available to support parental involvement in intervention programs, current sociopolitical pressures to get parents more involved in their children's education is strong and will likely continue. At this point it would be useful to reflect on what has led to present practice (a historical perspective), examine present practice, and propose ways of diminishing the gap between theory, research, and practice.

Historical Perspective

The concept of parental involvement in education is a not a new one; however, over the last 2 centuries, it has taken on new meanings and been shaped by the various prevailing philosophies of childrearing and parent participation. (Berger [1983] provides a useful historical summary.) Parental involvement was being discussed as early as the eighteenth century in the United States. At that time, the phrase "parental involvement" denoted childrearing advice given through pamphlets, typically by Protestant-Calvinist mothers concerned about the moral and religious education of their children. During the late eighteenth and early nineteenth centuries, groups and associations were formed by mothers who

sought information on child-rearing and consulted "experts" in the field for advice. The American Association of University Women, the Child Study Association of America, and the National Congress of Parents and Teachers (which came to be known as the "PTA") were three major groups that organized parental education efforts. These organizations were mostly composed of middle- and upper-class women. At the same time, "underprivileged" mothers were the beneficiaries of experts' advice through settlement houses. Over the years, the focus of parental education efforts evolved from children's moral and religious development to their emotional, physical, and mental health, and personality growth. During the 1960s, this focus broadened to include cognitive growth as concern for this area of development swept the nation, partially as a result of Russia's successful Sputnik launch.

The period between the early 1900s and the 1950s was marked by an explosion in parent programs and increased membership in parent organizations such as the PTA (from 60,000 in 1915 to 9 million in 1950). During this period, parental involvement focused on participation in education courses that centered on children's social and emotional development. Parental involvement followed the prevailing view that the intellectual development of children and the formal learning of reading, writing, and arithmetic began when children entered school. Parents' roles were simply to be supportive of teachers and schools.

Major anti-poverty legislation enacted in the 1960s had a substantial impact on parental involvement. The 1964 Economic Opportunity Act provided for a variety of Community Action Programs (CAPs) that encouraged active participation by members of the community in the development, implementation, and administration of programs. This legislation, greatly influenced by the civil rights movement, addressed marginal groups' (particularly the poor and racial/ethnic minorities) desires for shared governance and self-determination. Although not without its critics, the first Head Start programs emerged from a CAP. (For a complete history of Head Start's development, see MIDCO, 1972; Zigler & Valentine, 1979.) Head Start, first conceived as a summer program, was designed to prepare children from low-income families to enter school. Unlike other CAP efforts, parents were first seen as "adjuncts to the program, not central to it" (MIDCO, 1972, p. T-64). In subsequent years, the roles of parents were more clearly defined as learners, teachers, and decision makers.

The role of the parent as learner stemmed from an underlying premise of Head Start's developers that low-income parents needed to learn how to provide "adequate" educational environments for their children. Although not described as such, this deficit model assumed that many of the academic difficulties that low-income children encountered were due to the inadequate preparation they were receiving at home. Consistent with their role as decision makers, as delineated in the Head Start Policy

Manual, parents were to decide on their own specific educational needs. However, the extent to which parents were aware of their rights and the loci of true power has been questioned since Head Start's inception. The role of parents as teachers was seen as a mechanism by which parents could transmit what they had learned to their children. The assumption underlying this role, though, was that parents were teaching attitudes and skills that were inappropriate or counterproductive to academic achievement--a deficit model orientation.

The success of Head Start programs, especially their parental involvement components, has had an influence that extends beyond their immediate recipients. For example, parental involvement has become an integral component of the Chapter 1, Even Start, and Family English Literacy Programs. The most recent legislation affecting the rights of disabled children, P.L. 99-457, requires parents to be integral members of intervention teams.

During the late 1970s, a wave of school and teacher education reforms began, many of which are still under way. The effective schools movement emerged during this period, spawning many programs that emphasized in-school activities, such as school, classroom, and student management (Edmonds, 1979). The parental involvement aspects of these programs focused primarily on the decision-making roles of parents.

Concurrently, although not reaching its greatest height until the last few years, there has been a renewed interest in parents as learners and teachers. This renewed interest is due to the national need to be more economically competitive, the need to reduce social inequality and instability, and political reality (Davies, 1992). Economic competitiveness as it relates to education is an issue that has generated much discussion of late. Walberg (1984) suggests that unless America invests more heavily in its children's education, "Australia, Africa, and North and South America are to be [no] more than hinterland farms, mines, and smokestack industries." Arguing from a "production" perspective, Walberg maintains that children's nonschool hours could be more productively spent in a home curriculum that promotes academic achievement. This "increased productivity" could be achieved without large increases in cost (Davies, 1992).

The issues of social inequality and instability have as much of their root in *noblesse oblige* as they do in economic reality. As a country, we have been proud of our belief that "all men are created equal" and, as such, we strive to eliminate any vestiges of inequality. At the same time, future economic growth will depend on a technologically advanced populace whose products can compete in world markets. Whether or not it is based on the notion of economic competitiveness, there is some consensus across the

nation that the task of teaching children cannot be accomplished by schools alone, and that families must become more active in their children's education.

History tends to repeat itself. Twenty-one years ago, Piven and Cloward (as quoted in MIDCO, 1972) noted:

> . . . the situation came to be looked [at] as critical. What appears to have stimulated this awareness was the breakdown of social controls, as evidenced by the rise of juvenile delinquency, the increase in drug addiction, and an increase in serious crimes; massive unemployment--the rule of thumb is that unemployment among Blacks is usually twice the national rate and unemployment among young Blacks is four times as great; the extent [to] which young people in inner cities were dropping out of school; and the rise in welfare caseloads, female-headed households, and illegitimacy. (p. I-33)

The critical problems that were facing our country in the early 1970s gave rise to numerous programs designed to ameliorate them. Today's "new" problems, similar to those faced in the 1970s, have also given rise to a multitude of programs. The extent to which any of the existing solutions will eliminate these problems awaits the test of time.

Present Practices

The premise that the family exerts a significant impact on educational outcomes has stimulated a variety of intervention programs that feature, as a major component, parental involvement. The term "parental involvement" has been used quite generically to refer to a range of activities involving parents. Some intervention programs have focused on parents as learners, some on parents as teachers, and some on parents as decision makers; still others have incorporated two or three of these roles. Ascher (1987) suggests that parents can play a variety of roles ranging from active decision makers to passive recipients of information mailed by schools. However, the recent focus seems to be on parents as teachers and learners:

> Increasingly, parent involvement means parents initiating learning activities at home to improve their child's performance in school . . . what parents can do naturally in the home to socialize their children and what schools can do to help parents be more effective in the home. (Ascher, p. 5)

Epstein (1990) suggests that changing the major location of parental involvement from the school to the home would result in a greater and more productive type of involvement.

Regardless of the role(s) targeted, intervention programs designed to involve parents in their children's education are based on several assumptions, five of the most significant of which are examined below.

Assumption 1: Parents' attitudes and behaviors are not generally conducive to their children's academic achievement.

There is a general belief that the preparation for learning that many children receive at home is inadequate or differs fundamentally from what schools expect. This "deficiency" has been associated with differences in attitudes and beliefs about schooling among poor families, poorly educated mothers, recent immigrants, and racial/ethnic minority groups (Kurtz, 1988; Liontos, 1992; Nicolau & Ramos, 1990; Peng & Lee, 1991) or changes in the family structure, such as the emergence of single-parent homes, female-headed households, and teenage parents, which have "eroded the traditional social network through which parenting skills were passed from one generation to the next" (Preparing Young Children).

Clark (1983) argues that it is not specific sociodemographic characteristics of families but rather the "quality of family life-style" which determines how well a family prepares children to be academically competent in the classroom. This "life-style" is, according to Clark, determined by a multiplicity of factors, such as parents' upbringing, past relationships and experiences with institutions, current support network, social relationships in and out of the home, and satisfaction with their present socioeconomic status (SES). Despite Clark's broader ecological perspective, the majority of studies presently available focus on specific subgroups whose memberships are determined by sociodemographic characteristics.

Several authors have commented on the lack of preparation for schooling that poor and racial/ethnic minority children receive at home. Kurtz (1988) states:

> . . . poor children frequently enter school without readiness skills, often with physical and mental handicaps, and are at risk for school adjustment problems. Some kids reach kindergarten, for instance, without having been read to or even talked to and can interact with other children only by hitting.

Nicolau and Ramos (1990) comment that "most low-income Hispanic parents are unaware of specific practices--such as talking and reading to children and encouraging their curiosity." Liontos (1992) believes that some children have underdeveloped language skills because of cultural norms and parents' reading deficiencies, and further suggests that many parents do not feel capable of carrying out these activities.

The research literature has provided considerable evidence of the relationship between specific home variables and school achievement. These studies have related family literacy (Heath, 1983; Snow & Ninio, 1986; Taylor & Gaines, 1988), parent discipline practice (Datcher-Loury, 1988; Ritter & Dornbusch, 1989), household composition (Thompson, Alexander, & Entwisle, 1988), and SES (Baker & Stevenson, 1986; Coleman, 1987; Entwisle, Alexander, Cadigan, & Pallas, 1986; Lareau, 1987, 1989; Leitch & Tangri, 1988) to academic achievement. Each of these studies supports the notion that the

aforementioned variables have considerable influences on academic achievement. Peng and Lee (1991), in a large-scale study using NELS:88 data, found that low-SES and minority families' poor home environments showed a strong relationship with academic achievement. They suggest that, "lack of proper knowledge in caring for and educating a child is probably the major factor of poor home environment." They further suggest that what is required is parents' commitment to their child-care responsibilities and an understanding of their important roles in ensuring that their children perform well in school. These roles include providing appropriate environments, spending more time with children, discussing schoolwork and other matters on a regular basis, checking homework, and setting higher educational standards.

It is difficult, if not impossible, to argue against the mounting evidence that supports the notion that specific sociodemographic variables are related to academic achievement. However, taken together, these variables fall short of capturing the process by which parents prepare their children for school (Clark, 1983). In addition, they tend to perpetuate stereotypes of particular groups. What seems to be needed are more holistic views of how learning is influenced within specific families, how this learning is affected by the family unit's relationship to other social networks, and how elements of families' ecologies shape the context of learning. These views must also take into consideration where and how this learning is to be displayed. A mismatch between parents' child socialization practices and school expectations does not necessarily imply that parents' attitudes and behaviors are not conducive to academic achievement. An alternative view is that schools have not adapted their instruction to a variety of child socialization practices.

Assumption 2: Programs designed to address parent's individual needs will be developed.

Dunst and his colleagues (Dunst & Trivette, 1988; Trivette, Deal, & Dunst, 1986) have argued that provision of support has its greatest impact when it is offered in response to families' self-identified needs. According to these researchers, support that is offered when families have not identified specific needs has minimal or even negative effects. They further suggest that adequate determination of families' needs must precede any type of intervention. This determination will ensure that the services provided are positive, proactive, responsive, and individualized.

A need exists, according to Bennett, Lingerfelt, and Nelson (1990), when there is a "discrepancy between the help-seeker's assessment of his/her actual situation and the desired situation." Recognition of needs requires individuals to seek solutions and put forth the efforts necessary to fulfill these needs. The most basic of needs, according to Maslow's (1954) hierarchy of needs, are physiological ones.

According to this hierarchy, individuals will not devote considerable energy to satisfying higher level needs unless more basic needs are satisfied. It is this environmental press that will "guide an individual in a particular direction" (Garbarino, 1982, p. 13). For example, significant life stresses associated with poverty may force some families to assign children's developmental needs lower priorities than do middle- and upper-SES families. Once basic needs are satisfied, families can seek solutions and put forth efforts to satisfy higher level needs such as child development.

The research literature on the efficacy of programs that attempt to meet parents' individual needs is scarce and tends to demonstrate the difficulties involved in programs attempting to extend their activities beyond the family-child system--a requirement for almost any program intended to address the needs of developmentally vulnerable populations. Brinker, Frazier, and Baxter (1992) assisted parents in decreasing self-identified barriers to participation in an early intervention program. Despite the individualized nature of the intervention, no difference in participation was found between the control and experimental groups. Brinker and his colleagues acknowledge that their efforts were "like trying to light a fire in a hurricane" and that the lack of collaboration among social agencies greatly hindered the success of the program developers' efforts.

The majority of existing programs have rarely taken into consideration parents' self-determined needs. Instead, program developers have focused almost exclusively on their own perceptions of parents' educational needs, usually basing their designs on one of two perspectives. One approach holds that parental education programs should assist parents in providing more adequate environments for their young children. This perspective often assumes that parents are unaware of, or incapable of identifying, their own educational needs. Thus, parents rarely decide the content and method of the information conveyed to them. In most programs, information is offered without determining families' priorities for such information. A somewhat different perspective is that parents need to learn the skills and strategies necessary to function and manipulate the "system" (i.e., to become informed consumers and decision makers). A large number of activities labelled as "parental involvement" have been designed to meet this need (e.g., parents' participation in policy councils and other school-based decision-making forums).

Ideally, parent programs should be tailored to the individual needs of each family. Since no two families are alike, and what has worked for one family in the past will not necessarily work with another in the future, it is important to set aside the inclination to categorize according to preconceived notions about these families or their needs. It is essential that we begin asking families what they want, rather than providing them only those services immediately at our disposal. We must recognize the heterogeneity of families and attempt to avoid the error of forcing each family to fit into a single type

of program. It is also important to realize that respecting families' wishes implies that we must also accept their refusal of our services.

Intervention programs that take parental needs into consideration and attempt to assist parents in solving problems may be more difficult to implement and possibly more expensive than existing programs. However, these programs will probably be more successful at reaching their objectives.

Assumption 3: Parents will participate in programs.

Getting parents involved in the education of their children has been the overall goal of numerous intervention programs; this concept, however, has been defined in a variety of ways (Collins, Mole, & Cross, 1982; Epstein, 1990; White, Taylor, & Moss, 1992). Epstein (1990) has identified five types of parental involvement, two of which (Basic Obligations of Parents and Parent Involvement in Learning Activities at Home) focus on what parents can do in the home to ensure "positive home conditions that support school learning and behavior." A third type focuses on the type and frequency of communication between home and school. Involvement in school activities (volunteering in the classroom or other school events and attending school functions) is central to the fourth type of parental involvement. The last type discussed by Epstein concerns parental involvement in government and advocacy.

White, Taylor, and Moss (1992) distinguish between two types of parental involvement based on the direct beneficiary of the intervention. Parent programs in which the child is the direct beneficiary focus on parents as interveners and classroom aides, and emphasize parent/child relations and sensory stimulation. Programs in which parents are direct beneficiaries focus on emotional support, resource access, parenting skills, job training, knowledge of child development, and respite care. Analyses of 172 early intervention programs with substantial parental involvement components revealed that, in the majority of cases analyzed, parents used as interveners were the sole or major focus of programs (White, Taylor, & Moss, 1992). The consistency of this finding across programs that involved disabled, at-risk, and disadvantaged children reflects a large gap in our present research base.

Regardless of how parental involvement is defined, program developers have often found themselves frustrated at low levels of parental participation. Mayer and Meshel (1982), who developed an early intervention program for high-risk children, found that 24% of families referred to the program would not consider participating in the program, and 40% dropped out within 3 months. Slaughter (1983) recruited subjects by canvassing mothers in an entire housing project. One third of these mothers refused to participate, and 50% of those who did dropped out during the 2 years of the study. Bricker (1986) found that only 20%-40% of these parents were actively involved in the program. Meyers and

Blacher (1987) noted that 31% of these families had only rare communication with their children's schools, while 5% had none at all, even though these were children with severe disabilities, and approximately 50% of these parents reported no, some, or little involvement in their children's education.

Lynch and Stein (1982) surveyed parents of disabled children to gauge their participation in individualized education program (IEP) meetings, a requirement under P.L. 94-142. Of the 400 parents surveyed, nearly three fourths reported that they were actively involved in the development of their children's IEPs. However, only 47% of these parents made suggestions during the meetings. Participation rates varied across racial/ethnic groups, with white parents being more active. In a follow-up study, Lynch and Stein (1987) found that half of the Latino families interviewed were not active participants in the development of their children's IEPs, and only 34% actually offered suggestions during the meetings.

The extent to which parents' participate in any type of school-based activity appears to be influenced by several factors, including the children's educational levels (Berla, 1991; Epstein, 1986; Gotts & Purrell, 1987; Perez, 1985), whether the schools are urban or rural (Gotts & Purrell, 1987), and children's educational achievement (Clark, 1983).

Parental involvement tends to be greatest in the early years and declines thereafter as a result of different types of barriers. Thus, it might be a mistake to apply an early childhood model of involvement when evaluating parental involvement at higher grades. Perez (1985) found that parents who were eager to participate actively in their children's education encountered certain barriers when their children transitioned from Head Start to kindergarten. These barriers included: less teacher time to devote to parents; larger class sizes; and absences of child care, free lunches when parents volunteered in classrooms, links with social service agencies, programs designed to improve parenting skills (most school programs focus on children), and transportation to school with children. Berla (1991) discussed various factors that make parental involvement at the middle school level even more difficult, including: the impersonal structure of many middle schools, attitudes of boys and girls in adolescence, and lack of school encouragement for parental participation. Despite their greater need for individual skills such as negotiation and information gathering (Useem, 1990), parents of older students typically receive less assistance (Epstein & Dauber, 1991), especially if their children are educationally and economically disadvantaged (Epstein, 1992).

Gotts and Purrell (1987) identified further differences between parental involvement at the elementary and secondary levels. At the elementary level, relations are physically closed and involvement is expressed by being present. At the secondary level, relations occur at a greater distance. For

example, parents of elementary school children attend general parent group meetings, while secondary school parents tend to attend special-purpose group meetings such as athletic events or plays. At the elementary level, parents monitor school programs by visiting schools, reviewing their children's work, and discussing progress with teachers. At the secondary level, monitoring is accomplished by reading newsletters; school visits and teacher contact usually only occur when problems arise. Gotts and Purrell (1987) also examined teachers' practices and parents' views concerning involvement in urban and rural areas. In urban areas, reduced opportunity for informal contacts between parents and their children's teachers was compensated for by the scheduling of additional formal meetings.

Children's achievement levels correlate the extent of parental involvement. Clark (1983) found that parents of low achievers avoided school contacts, while parents of higher achieving students were more assertive. The work of Lareau (1989), on the other hand, suggests that the extent to which parents become involved in their children's education varies as a function of the parents' SES, regardless of achievement--the higher the SES, the more involvement.

Most of the extant research on parental involvement has taken a unidimensional perspective in which one or two variables are correlated to parental involvement. Lareau's (1989) work suggests that multiple, interrelated factors may contribute to parental involvement. In her studies of two communities in California, she found that different interrelated social networks (family, marriage, work, and school) had effects on how parents viewed schools and learning. These interrelated networks influenced the extent and types of involvement parents had with schools and their children's learning at home.

In contrast to the research literature, the literature on best practices tends to focus on multiple factors that contribute to parental involvement. This literature has focused on the identification of obstacles to parental involvement and descriptions of methods of overcoming them. Liontos (1991) suggested that some of these obstacles are "due to benign neglect . . . to political or professional barriers . . . to emotional barriers felt by the parents . . . and to ignorance, lack of awareness, and misunderstanding." Liontos distinguishes between two types of barriers--barriers for parents and barriers for schools and teachers. Barriers for parents include: (a) feelings of inadequacy, failure, and poor self-worth; (b) negative attitudes and bad experiences with schools; (c) suspicion that schools are not treating them equally; (d) "leave-it-to-the-schools" attitudes; (e) cultural and language barriers; (f) economic, emotional, or time constraints; and (g) logistical problems such as child care and transportation. Barriers for schools and teachers include: (a) inabilities to commit to parental involvement programs; (b) confusion about the roles of teachers; (c) concerns about turf and territory; (d) doubts about their abilities to work with at-risk parents; (e) beliefs that at-risk parents are apathetic, difficult people with whom to

work, and will not keep commitments; (f) low teacher expectations for at-risk children; (g) assuming passive roles or failing to help parents feel welcome; (h) the fact that communication from school often focuses on negatives; and (i) lack of time and funding.

Numerous methods of overcoming the obstacles mentioned above have been proposed. However, for the most part, these approaches have not been studied with any degree of scientific rigor. The lack of systematic studies on the effects of individual practices is best illustrated in the U.S. Department of Education Report, Working with Families (Goodson et al., 1991). The purpose of this study was to identify and describe promising strategies in family education programs that focused on working with low-income families. The primary goal of these programs was the enhancement of children's cognitive development and school success. As the authors commented, "few family education programs studied carried out summative evaluations with rigorous experimental design" (p. xii). For example, all programs used a variety of recruitment (e.g., door-to-door solicitation, hanging posters throughout communities) and retention approaches (e.g., tangible rewards, holding meetings at convenient locations and times). Without any systematic evaluation of these components, however, it is impossible to ascertain whether one or a combination of these approaches, or other factors not considered by the program developers, were responsible for the "success" of the programs.

The issue of whether any of these efforts can be considered successful is also questioned. With some exceptions, very little information is provided on the potential number of participants. Rather, only information on the number of actual participants is provided. Thus, it is impossible to determine the number of individuals who would have participated regardless of recruitment or retention efforts. Again, without systematic studies, no definite conclusions can be reached on the value of these efforts.

The authors of the aforementioned U.S. Department of Education report (Goodson et al., 1991) suggest that rigorous evaluation research "will have to come from the wider research community rather than from the programs themselves." Although the reasons programs have not embarked on rigorous evaluations are understandable, we cannot afford to continue implementing programs solely on the "experience of seasoned practitioners and careful analysis of local needs" (Moles, 1987, p. 142).

Assumption 4: Program content and approach will lead to changes in attitudes and/or behaviors.

From an ecological perspective, there can be no single blueprint for parent programs. Each program's content and approach must be sensitive to the ecologies in which the families it intends to serve live. From this perspective, one can argue that examining the characteristics and practices of "successful"

families (generally middle- and upper-class white), and attempting to transfer their skills and attitudes to less successful families, is inappropriate and might lead, in some situations, to counterproductive outcomes. However, for the most part, this transfer of skills and attitudes is exactly how parent programs have been organized. As pointed out by Liontos (1992), the literature on parental involvement is "filled with prescriptions and ideas that are most effective with middle-class parents and families" (p. 2). Given the importance of the home curriculum on academic achievement, it is not surprising that many parent programs have focused on providing parents with information on child socialization practices and on ways in which parents can provide children academically enhancing activities outside of school.

Numerous authors (Au & Jordan, 1981; Erickson & Mohatt, 1982; Heath, 1983; Iglesias, 1985; Kochman, 1982; Philips, 1972; Ramirez & Castaneda, 1974; Saville-Troike, 1979) have noted the lack of congruency that exists between the socialization practices of nonmainstream populations (poor and racial/ethnic minority groups) and the skills required to succeed in the American educational system. As pointed out by Saville-Troike, "[The American educational system] is one which serves primarily to prepare middle-class children to participate in their own culture" p. 141.

Researchers, program developers, and practitioners often fail to recognize that there are numerous means to developing competent adults (the goal of socialization). The recommendations of many researchers and program developers and the present practices of many practitioners focus on a unidirectional path rather than the potential equifinality of numerous paths. Ascher's (1987) statement that socializing children for school means "conveying the importance of education, supporting teachers' activities such as homework and attendance, and [being] willing to participate in school activities" should be considered one, not the only, avenue to academic achievement.

The "unidirectional-path-to-success" perspective has led many program developers to focus their training on providing parents with a knowledge base that the developers feel parents need in order to enhance their children's development. For the most part, the developers of these programs have focused on what they consider to be parents' gaps in knowledge, and have assumed that providing parents with these often disconnected bits of information will change their present practices. They have also assumed that changes in practices would increase continuity between home and school and lead to positive educational outcomes.

Various approaches have been taken to provide parents with necessary information, including home-based programs, joint child/parent classes, parent group meetings, and written curricula. Some programs, such as AHEAD, Home Base, HIPPY/Miami, and Prestame Una Comadre, have used home-based approaches in which program staffs visit families in their homes and demonstrate desired skills.

Despite its appeal as a highly personal type of interaction, available data does not support the notion that homogeneous, home-based intervention is effective (Epstein & Weikart, 1979; Field, Widmayer, Greenberg, & Stoller, 1982; Gray & Ruttle, 1980; Jeste & Guinagh, 1983; Ramey, Bryant, Sparling, & Wasik, 1985). However, the work of Rosenberg and Robinson (1985) suggests that this ineffectiveness might be more related to the types of curricula offered than to whether the training is done at home. Rosenberg and Robinson found that parents who, prior to intervention, were receiving standard home visitations that focused on development and use of home visitors as models showed dramatic increases in quality of parenting behaviors when the interventions were targeted specifically to dyads. Joint parent/child programs in which parents and children are actively involved in individual tasks and are provided feedback by parent program monitors have been effectively used in several programs, such as HIPPY/Miami, Keenan Trust Family Literacy Program, and Project Fiel. Based on Rosenberg and Robinson's data on individualized programs, this type of approach should be successful provided that programs' training has spillover effects on how parents interact with their children after they exit the program.

Parent group meetings is another approach used to provide parents with information. In this type of program (e.g., Family Study Institute, HIPPY/Miami, Project AHEAD, McAllen Parental Involvement Program), parents attend group meetings in which particular topics, usually related to school curricula or child development, are presented. The advantage of this approach is that parents are given opportunities to interact with other parents and, since many of these programs are held at school, with school personnel. A drawback of this type of program has been described previously--parents are reluctant to become involved in school-sponsored activities. Yet another approach taken by some programs (e.g., TIPS-Math, ABT Program) involves providing parents with written curricula only. Although easy to implement, this program does not provide much interaction among parents and among parents and staff.

As noted in the Goodson et al. (1991) report, "There is no evidence that one approach works best with all families or with all staff" (p. 70). None of the "promising programs" examined by these researchers had attempted any empirical means of evaluating the effects of various approaches on parents with distinct characteristics. As noted by the authors, "discussions with program staff reveal hypotheses about the match between program approaches and parent characteristics, but, thus far, these hypotheses have not moved beyond practitioner knowledge into research evidence" (p. 103).

There are, however, data suggesting that the type of approach used may be determined by program philosophies concerning the natures of problems. Farran (1990) compared the degrees of

parental involvement in 74 intervention programs (42 programs for the disabled, 32 for the disadvantaged). Parents of disadvantaged children were viewed by staff as part of the "problem"; as such, staff considered themselves the best interventionists (50% of program time was devoted to staff-only activities). On the other hand, staff working with disabled youngsters viewed the "problem" as lying within the children themselves, which caused different attitudes to prevail. Parents in these programs were more often perceived as appropriate intervention agents (only 31% of program time was devoted to staff-only activities). Of even greater significance was the time spent by staff and parents working together (40% in the programs for the disabled, 22% in the programs for the disadvantaged). Parents of disabled children participated in activities specifically related to children's disabilities (e.g., diapering children with cerebral palsy--a direct and overt relationship between activity and problem), while the activities in which disadvantaged parents engaged were not as easily connected to deficits (e.g., how to play more appropriately with materials). The extent to which different approaches to parental involvement are affected by program philosophies concerning the natures of problems is intriguing and deserves a much closer examination.

Another area in which programs differ is the content of their curricula. For the most part, curricular content for parent programs tends to focus on skills believed by program developers to be necessary for enhancing child development or children's future academic success. The majority of these curricula are locally developed and have not been thoroughly evaluated. Parent program curriculum developers often note how their curricula address the needs of the individual families for which they are designed. These accommodations usually refer to the translation of materials into the language spoken by the participants and the incorporation of superficial artifacts of the culture (e.g., foods, holidays). Ideally, parent programs are sensitive to local cultural values and beliefs and adapt curricula accordingly; unfortunately, however, very little information is available on how successful these programs are at doing so, and on how different cultural groups adapt to diverse parent programs.

Gordon (as quoted in Ascher, 1987, p. 9) suggests that establishing programs that are "reasonably well planned, comprehensive, and long lasting," as opposed to the fragmented, mismanaged forms they often take, is of primary importance. This approach to program development may satisfy various funding agencies, but it provides very little guidance to program developers attempting to base practice on solid scientific evidence.

Assumption 5: **Programs will lead to long-lasting behavioral and/or attitudinal changes that have positive effects on children's academic achievement.**

All parent education programs are based on the assumption that the information which parents receive during training will change their behaviors and, indirectly, affect the behaviors of their children. However, the degree to which this is accomplished depends on a number of variables, some of which are related to parents, others to programs. The changes parents are asked to make are often very arduous and cannot be accomplished without long-lasting support. Some program participants must not only reorient their own ways of thinking, but must also persuade other members of their immediate networks to do the same, or at least support their efforts. Wachs & Gruen (1982) have speculated that the effects of intervention can only be maintained if parents have the time and social support to continue intervention, and the necessary motivation and skills. The skills, and to some extent the motivation, that these parents possess will be a direct result of the effectiveness of the individual procedures and methods used in the programs in which they enroll.

The characteristics of individual parents and the social environments in which they live are variables of which program developers and researchers must be cognizant, but over which they have little or no control. However, the procedures and methods used in parent programs *are* alterable and their degrees of effectiveness, both in the short run and in the more distant future, can be examined and modified. Our present research base does not permit us to make unequivocal statements concerning the effectiveness of parent programs; studies have been conducted, but many of them were conducted in manners that do not meet criteria for quality research.

The goal of any program evaluation is to document changes and demonstrate that these changes are relevant to the intervention program in some meaningful way. Ideally, evaluations meet standard criteria for quality research (Campbell & Stanley, 1966) and provide information on how the various aspects of programs interact to produce observed outcomes (Dunst, 1986). Rigorously controlled, systematic evaluations of parent programs are rare. Even less attention has been placed on isolating and documenting the effects of individual practices on students' academic achievement (Epstein, 1992). In part, the lack of empirically sound evaluation is due to the fact that programs are not scientific laboratories in which parents are randomly assigned to groups, multiple-criteria outcome measures that evaluate proximal and distal program effects are used, and situations allow for internally valid research designs.

Sample selections have been conducted, in general, on the basis of convenience, often slighting the more onerous tasks requisite in such scientific endeavors, such as making random selections from very

large populations. Consequently, sampling biases are almost certain to taint the majority of these studies. For example, most parent programs rely on parents to volunteer for programs; since this results in self-selected groups, little randomization occurs. Routinely, parents who volunteer for particular programs are those who feel most comfortable with the particular approaches used. These parents are predisposed to benefit from such programs and are likely to participate for their durations. Nonvolunteers or parents who are less committed to particular programs are more likely to drop out. This raises the question of whether parents who participate for the entire length of programs are characteristically similar to those who drop out or do not participate at all. For example, Gourash (1978) found that individuals with strong and helpful informal networks are less likely to seek out help from formal support systems. Several studies have attempted to account for subject attrition by comparing initial samples to final samples on the basis of a few, usually demographic, characteristics; researchers have consistently found no differences between the groups. Whether the variables used to compare the two groups were correctly chosen is open for discussion.

In an attempt to decrease the heterogeneity of the subjects, the majority of studies have been conducted using what researchers consider to be homogeneous groups, usually defined according to race and SES. Most of the studies cited by prominent reviewers in support of the benefits of parental involvement in early education (Gray & Klaus, 1970; Karnes, Teska, Hodgins, & Badger; 1970; Radin, 1972) have focused on low-income, African-American parents. Although this group is disproportionately represented among the poor, the lack of data on other groups (e.g., poor whites and Hispanics) raises the question of the generalizability of the results of these studies to other populations.

An additional factor to consider when discussing the generalizability of studies of parent programs is the ages of the parents' children. For the most part, the literature has focused on children at the preschool level. Given the evidence that parents perceive their roles differently at different stages of their children's development (Ballenski & Cook, 1982; Galinsky, 1981), it is important to further examine the efficacy of these programs for older children.

Researchers often attempt to assess program efficacy by measuring programs' impacts on children's academic outcomes. Although substantial increases in academic achievement are often viewed as the ultimate goal of parent programs, researchers often fail to recognize that a constellation of variables supports academic achievement and that changing only one of these variables (e.g., how parents behave at home as a result of their parent training) may or may not be significant enough to alter children's performances on standardized measures of narrow ranges of child outcomes.

Despite the recognition that individual variation in parents' characteristics can play a role in determining the effects of programs, very few studies have analyzed their data on individual family levels. The unequal effects that programs might have on individual families tend to increase intersubject variability and decrease the probability of finding significant program impact. For example, some families may be seeking new information, while others may be seeking verification of current practices; a given intervention program may have significant impact on the former but not the latter.

Programs can have both proximal and distal effects. Proximal effects are those that occur during or immediately following interventions; distal effects occur after given periods of time have elapsed following interventions. The most powerful measures of program effectiveness are those that can be demonstrated long after parents have exited programs. However, finding large distal effects is difficult. Given the multiplicity of variables that can influence outcomes over long periods of time, a lack of distal effects does not necessarily imply "no effects" in the proximal sense. The logistical problems of assessing long-term program effects and the need by program directors for formative, rather than summative, evaluations has resulted in the undertaking of very few distal studies.

Present parent programs are a conglomerate of approaches that differ in goals, formats, and durations. Considerable variability exists in the duration and intensity of programs, as well as in the techniques used (e.g., group discussions, didactic instruction, modeling). It is difficult to determine from present studies which components are responsible, or even necessary, for change. Thus, it is not surprising that no distinct patterns of effects across different populations or program types have emerged in the literature.

Several comprehensive efforts to assess the effectiveness of parent programs have been conducted (Bronfennbrenner, 1974; Comptroller General, 1979; Datta 1971; Florin & Dokecki, 1983; Karnes & Lee, 1978; Lazar, 1981; White, Taylor, & Moss, 1992). With the exception of the White et al. synthesis study, all other major reviews suggest that adding parent components to existing programs would make them more effective. White and his colleagues do not argue against the effectiveness of parental involvement in programs, but note the failure of present research to support the claim that parental involvement has positive effects on program outcomes. Using the procedure described by White (1985), they analyzed 20 studies used by prominent reviewers to support the aforementioned claim, and 193 intervention versus no-intervention studies--some of which involved parents and some that did not. Only 5 of the 19 studies used to support this claim were judged to have high internal validity, and only 3 of the 19 were deemed direct tests of whether programs were more effective when parents were involved. Although the majority of the studies showed positive effect sizes, their lack of internal validity, as well

as their overall design, made it impossible to support, with any degree of certainty, the conclusions of previous researchers. Analyses of effect sizes of intervention versus no-intervention studies with high internal validity indicated no differences between those programs in which parental involvement was extensive or moderate and those in which it was not. As pointed out by White et al. (1992), "the benefits of parent involvement in early intervention programs have gone far beyond the available scientific evidence . . . [and] we can find no credible scientific support for benefits described by prominent researchers, policymakers, or administrators" (p 120).

Future Practices

A general consensus presently exists among different stakeholder groups that partnerships between schools and families, in which each of these two institutions share major responsibility for the children's education, should be part of the solution to many of the social and economic problems presently facing our society. For some families and schools, these partnerships will require major realignment; for others, this will not be necessary. It is not surprising, but somewhat ironic, that the greatest realignment will be asked of those who have the least power and resources in our society--the poor and racial/ethnic and linguistic minorities. Regardless of how we, as individuals, feel about the social correctness of these changes, the present sociopolitical forces will press us into forging stronger partnerships between families and schools. The extent to which these partnerships succeed will depend on the extent to which we develop programs that are sensitive to the needs of the families we seek to help, as well as the extent to which we begin to base our programs on scientifically proven, cost-effective practices.

What we believe about how parents should behave within their family, marriage, work, and school networks reflects our values and, to some extent, the values of the cultural groups with which we identify. These beliefs and values are deeply ingrained and serve as a template from which we compare the beliefs and actions of others. The challenge we face as professionals is to develop an awareness of the diverse beliefs and practices represented in our pluralistic society and to examine the manners by which our programs and practices are guided. This awareness requires that we use an array of service delivery options that are, as much as possible, individually tailored to match family needs and styles. The ethnocentric view that proposes that all families will benefit from a single set of intervention practices, regardless of whether they are "best practices," must be discarded. Families are more likely to invest in intervention goals congruent with high-priority family goals, and they are more likely to implement those professional recommendations that match their values and beliefs.

At a minimum, a philosophy that supports and enables culturally sensitive intervention practices would incorporate an awareness of one's own values and beliefs about a variety of family-related issues, the knowledge that families are comprised of unique individuals and that this uniqueness influences how we define and adapt to events, and a commitment to honoring a broad array of family definitions, styles, and coping strategies.

One of the most surprising features of our present literature on parent programs is not the overwhelming evidence for or against it, but the lack of data to substantiate any of our present practices. Our existing data base must be greatly expanded to include information on a variety of topics. We need to have a greater understanding of family life from developmental and cross-cultural perspectives, and of how it influences children's and parents' school-related behaviors. Greater attention should be placed on conducting research studies that are scientifically valid and address the individual components of programs than on conducting studies of the overall effectiveness of highly diverse, almost always nonreplicable programs.

Negative events in history repeat themselves when we fail to learn from the past. If we continue to base our programs on unproven practices that are not ecologically sensitive, we will continue to face the "new" problems faced in the 1970s and in the 1990s.

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The National Center on Education in the Inner Cities

The National Center on Education in the Inner Cities (CEIC) was established on November 1, 1990 by the Temple University Center for Research in Human Development and Education (CRHDE) in collaboration with the University of Illinois at Chicago and the University of Houston. CEIC is guided by a mission to conduct a program of research and development that seeks to improve the capacity for education in the inner cities.

A major premise of the work of CEIC is that the challenges facing today's children, youth, and families stem from a variety of political and health pressures; their solutions are by nature complex and require long-term programs of study that apply knowledge and expertise from many disciplines and professions. While not forgetting for a moment the risks, complexity, and history of the urban plight, CEIC aims to build on the resilience and "positives" of inner-city life in a program of research and development that takes bold steps to address the question, "What conditions are required to cause massive improvements in the learning and achievement of children and youth in this nation's inner cities?" This question provides the framework for the intersection of various CEIC projects/studies into a coherent program of research and development.

Grounded in theory, research, and practical know-how, the interdisciplinary teams of CEIC researchers engage in studies of exemplary practices as well as primary research that includes longitudinal studies and field-based experiments. CEIC is organized into four programs: three research and development programs and a program for dissemination and utilization. The first research and development program focuses on the *family* as an agent in the education process; the second concentrates on the *school* and factors that foster student resilience and learning success; the third addresses the *community* and its relevance to improving educational outcomes in inner cities. The focus of the *dissemination and utilization* program is not only to increase awareness of the issues CEIC is researching, but, more importantly, to ensure that CEIC's findings are known and used to ensure the educational success of inner-city children, youth, and families.

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